AMERICAN GAS ASSOCIATION

MAY
1958

LOOK AT BOTH – AND YOU'LL BUY GAS!

See the

TAPPAN Built-In Range

for *FASTER cooking*

CLEANER cooking

automatic – all the way!

AUTOMATIC! There's no burning, no boil-over . . . with a Tappan Set 'n Forget surface unit! This Burner-with-a-Brain "feels" the heat of the pan, raises or lowers flame to maintain proper cooking temperature.

PRODUCT OF TAPPAN COMPANY, MANSFIELD, OHIO. CABINETS BY REPUBLIC STEEL KITCHENS.

AUTOMATIC! Tappan's built-in rotisserie! Have party cooking "picnic" style whenever you like—on spit that revolves automatically —cook chicken, shish-kabob or just plain hot dogs to perfection.

FREE-STANDING MODELS, TOO! Choose a Tappan range for *your* way of living! Free-standing or built-in . . . wide choice of sizes, colors, burner arrangements . . . plus all those marvelous automatic features!

FASTER COOKING! Gas gives you instant response, perfect control of cooking temperature the moment you want it. There's no wait for burners to warm up. When the burner's on, the heat's on. And when you use the new automatic top-burner controls, it's impossible for food to burn, stick or boil over. Food's safe, from start to finish. Even delicate sauces can be done to perfection every time.

CLEANER COOKING! When you cook on a modern Gas range, what a difference there is in the kitchen. No smoke or soot to dirty walls and cabinets, blacken pots and pans. Gas broiling is cleaner, too. It's smokeless. Every inch of a modern Gas range is a cinch to clean. Burners lift out; oven and broiler are easy to clean.

AMERICAN GAS ASSOCIATION

Approved by the Good Housekeeping Institute. Guaranteed by Good Housekeeping. As fast as advertised.

ONLY GAS does so much more...for so much less!

This gas light was presented to the A. G. A. Labs by Welsbach Corp.

THIS MONTH, and for the next two issues of the A. G. A. Monthly, special recognition is being given the companies who support the gas industry's PAR Plan. These companies, listed on pages 24 and 25, are the ones who will contribute some $3.6 million this year for the 1958 PAR budget. As the editorial on page 24 points out, these companies are really PARtners in '58. They are taking advantage of an action-tested team approach that helps the gas industry maintain its leadership while it helps the PAR subscriber to meet national promotion, advertising, research and public information needs. Every gas company benefits from the PAR program. Why not help support it by joining PAR today! . . . The industry's underground storage operations are expected to continue a steady growth in the future, according to A. G. A.'s annual statistical report on underground storage operations in the United States. Details of the report are on pages 2 and 3. . . . W. W. Selzer, chairman, Gas Air Conditioning Promotion Committee, pinpoints the air conditioning picture on page 4. . . . Gas heated homes at the end of 1957 were up 1.1 million over homes heated by gas as 1956 closed. The report is on page 9.

JAMES M. BEALL
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GROWTH OF UNDERGROUND STORAGE IN UNITED STATES, 1944-1957

Year	*Number of Pools*	*Number of States*	*Est. Total Reservoir Capacity (Cubic Feet)*
1944(a)	50	11	135 Billion
1947(b)	70	11	250 Billion
1949(c)	80	11	497 Billion
1950	125	15	774 Billion
1951	142	15	916 Billion
1952	151	16	1,292 Billion
1953	167	17	1,735 Billion
1954	172	17	1,859 Billion
1955	178	18	2,096 Billion
1956	188	20	3,402 Billion
1957	199	19	2,603 Billion

Sources:
(a) E. G. Dahlgren—API Eastern District Meeting, Columbus, Ohio
(b) E. G. Dahlgren—A.G.A. Natural Gas Department, Chicago, Illinois
(c) Max W. Ball—A.G.A. Natural Gas Department, French Lick, Indiana

Eight new underg... in process of constr... close

See steady growth in gas storage

BASIC UNDERGROUND STORAGE STATISTICS, BY STATE, 1957

(Mcf—14.65 psi at 60°F)

State	*Number of Pools*	*Number of Active Wells*	*Number of Compressor Stations*	*Total HP on Compressor Stations*	*Maximum Gas in Storage (Mcf)*	*Gas in Storage, 10/31/57 (Mcf)*	*Input to Storage, Year Ending 10/31 (Mcf)*	*Output from Storage, Year Ending 10/31 (Mcf)*	*Maximum Day Output, Year Ending 10/31 (Mcf)*	*Number of New Pools Under Construction*	*Ultimate Capacity New Pools (Mcf)*
Arkansas	2	17	1	145	4,741,859	4,712,402	374,598	334,517	5,789	—	
California	4	99	4	21,390	20,490,365	19,504,118	24,616,812	25,397,633	495,748	—	
Illinois	2	41	2	10,450	29,791,219	28,952,439	6,463,530	3,173,935	312,933	1	1,895,3
Indiana	6	262	3	2,460	8,501,510	8,280,638	2,324,837	2,157,620	82,736	—	
Iowa	2	45	2	3,750	13,235,433	12,534,978	11,075,608	2,465,116	52,557	—	
Kansas	13	658	5	18,930	62,516,539	62,495,018	24,377,609	24,112,894	372,142	1	20,000,0
Kentucky	6	247	2	8,890	20,307,097	19,896,009	7,888,714	6,709,401	206,037	2	2,513,2
Michigan	17	1,027	3	65,480	243,265,010	242,338,557	110,279,077	65,136,585	1,102,283	—	
Mississippi	2	21	2	2,600	2,777,013	2,258,914	894,974	899,297	123,045	—	
Missouri	1	19	1	1,980	5,278,875	4,682,614	3,352,337	166,913	24,132	—	
Montana	2	155	3	5,260	19,710,852	19,331,141	6,827,814	2,517,748	36,183	2	7,119,9
New Mexico	4	88	2	2,400	53,088,800	49,950,983	5,011,228	8,114,399	61,223	—	
New York	13	544	11	8,415	53,181,611	52,576,272	25,519,440	17,305,274	329,394	—	
Ohio	16	1,991	15	43,852	282,262,771	279,814,256	91,113,079	73,259,219	1,314,749	—	
Oklahoma	7	76	5	7,350	104,931,900	104,249,958	25,731,387	18,504,769	413,721	—	
Pennsylvania	59	1,832	40	142,580	366,182,279	361,448,914	157,795,747	125,744,303	2,448,953	1	810,3
Texas	4	64	4	8,330	25,964,273	25,964,273	11,939,689	2,140,872	93,000	1	2,590,0
West Virginia	37	775	23	54,530	245,684,373	227,714,435	103,272,520	76,039,201	1,322,330	—	
Wyoming	2	8	2	1,808	12,361,642	12,302,362	3,887,587	4,012,624	45,564	—	
Total	199	7,969	130	410,600	1,574,273,421	1,539,008,281	622,746,587	458,192,320	8,842,519	8	34,929,3

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	1955	*1956*	*1957*
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Number of companies	44	46	44
Number of pools	178	188	199
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Total horsepower of compressor stations	347,835	415,840	410,600
Maximum gas in storage—Mcf	1,150,246,421	1,389,704,931	1,574,273,421
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Ultimate reservoir capacity—Mcf	2,095,814,139	3,402,316,693	2,602,732,208
Number of new pools under construction	10	7	8
Estimated ultimate capacity of new pools—Mcf	81,712,480	58,669,486	34,929,386

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TOTAL NUMBER OF COMPRESSOR STATIONS AVAILABLE FOR UNDERGROUND STORAGE OPERATIONS

Input only	30	38	28
Both operations	81	88	87
Output only	13	13	15
Total	124	139	130

The gas industry's underground storage operations will continue to follow a pattern of steady growth, according to the American Gas Association's seventh annual statistical report on underground storage in the United States.

This view is supported by the eight new underground storage projects in the process of construction at the year's end, and the fact that total input to storage during the year reached an all-time peak of 623 billion cf, a 12 per cent gain over 1956.

Maximum gas in storage in 1957 totaled one trillion, 574 billion cf, an increase of 13 per cent over 1956, and 282 per cent more than the maximum gas stored in 1950.

The underground storage report was made May 8 by D. T. Secor, United Natural Gas Co. of Oil City, Pa., during the A. G. A. Operating Section Conference in New York. Mr. Secor heads the Subcommittee on Underground Gas Storage Statistics. The subcommittee is part of the A. G. A. Committee on Underground Storage.

The subcommittee reported that reservoir capacity declined from 3.4 trillion cf in 1956 to 2.6 trillion cf in 1957. This decline was attributed to the discontinuance of a storage project in Colorado for which a very large reservoir capacity had been reported in 1956.

The reduction in reservoir capacity represents a decline of 23 per cent from 1956, but an increase of 24 per cent from 1955. It also is an increase of 236 per cent from 1950.

There also was a decrease reported in the number and over-all horsepower of compressor stations devoted to underground storage use.

The maximum day withdrawal during 1957 was 8.8 billion cf, an increase of 10 per cent over 1956 and 241 per cent over 1950. Total output from storage in 1957 amounted to 458 billion cf, a decline of 7 per cent from 1956.

The number of storage projects in operation at the close of the year was 199 involving 7,969 wells as compared to the 125 projects with 3,853 wells devoted to storage at the end of 1950. While there were eight new storage pools under construction at the end of 1957, the added reservoir capacity which they will develop amounts to only 35 million cf—the smallest reported capacity under development in any year since these statistics have been published.

The subcommittee estimated total capital investment in storage facilities and cushion gas to be in excess of 500 million dollars.

States reporting the largest amount of gas in storage during 1957 again were Pennsylvania, Ohio, West Virginia, and Michigan. This absence of Colorado from the storage roster leaves the total number of states reporting underground storage operations at 19.

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The same four states led in maximum day output.

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The same four states led in maximum day output.

The industry's newest hope is also its greatest challenge; facing it is the electric heat pump

Air conditioning: year-round profit

Total Seasonal Gas Usage
for Air Conditioning, Typical Residence, Normal Summer, 3½ Ton

New York City	330 therms
Washington, D. C.	505
Miami	1755
Atlanta	650
New Orleans	1155
Dallas	820
Houston	1030
Memphis	700
Chicago	240
St. Louis	510
Oklahoma City	540
Minneapolis	205

To compute your own revenue, you may estimate your area therm usage and apply your company rate.

By W. W. SELZER

Chairman
Gas Air Conditioning Promotion Committee and Director, Business Promotion
Columbia Gas System Service Corp.

Gas air conditioning is the giant that will lead the utilities out of the desolate Summer Valley into which we have been condemned in the past. We could call this story: "profits 12 months a year instead of 4." Or, "summer profits instead of summer problems." But, any way you put it—gas air conditioning offers gas utilities the most profitable load potential on their lines.

However, just as gas air conditioning is the greatest hope of the gas industry, it is at the same time our greatest challenge. Never has the threat of competition been stronger. Facing gas cooling and gas heating is the powerful challenge of the electric heat pump.

Our competition is spending millions nationally and locally to promote the electric heat pump. And why? A house that's heated and cooled electrically is an all-electric house. It follows that a house that's heated and cooled by gas is an all-gas house.

In competition with the electric heat pump, our industry has many advantages. First, the economics favor gas. Year-round air conditioning can be added to gas utility lines without one cent of added capital investment in mains and services.

Further, interest in gas air conditioning has never been higher—both on the part of utilities and manufacturers. Utility sales of residential gas air conditioning in 1958 will be about 400 percent greater than last year's total sales.

Arkla already has orders and commitments from utilities for about 7,000 units for 1958. Also, as a result of increased utility sales and due to A. G. A. and manufacturer research, several new gas air conditioning manufacturers will make their bow in 1959 and the years following. Here are some specifics.

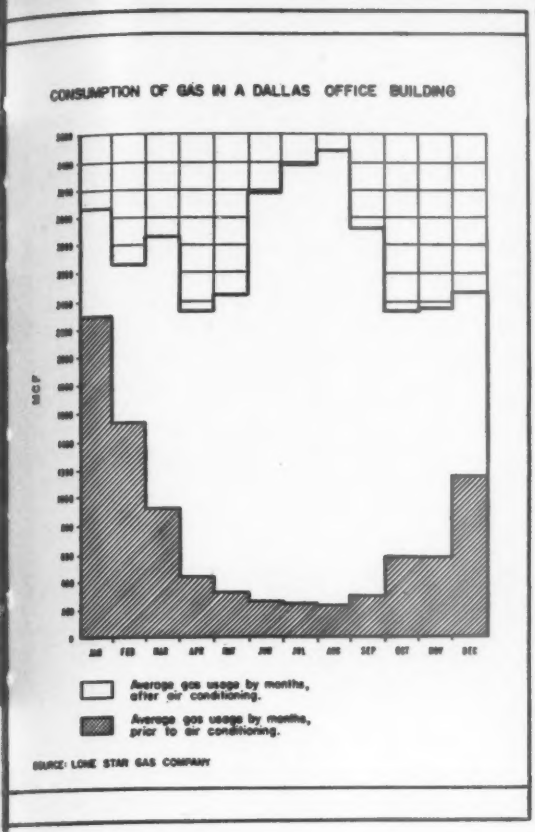
Field test reports on Bryant-Carrier's new Three-Ton unit which may be used as an add-on cooling unit are encouraging. They will have an additional 25 gas units ready for utility field testing by March or April.

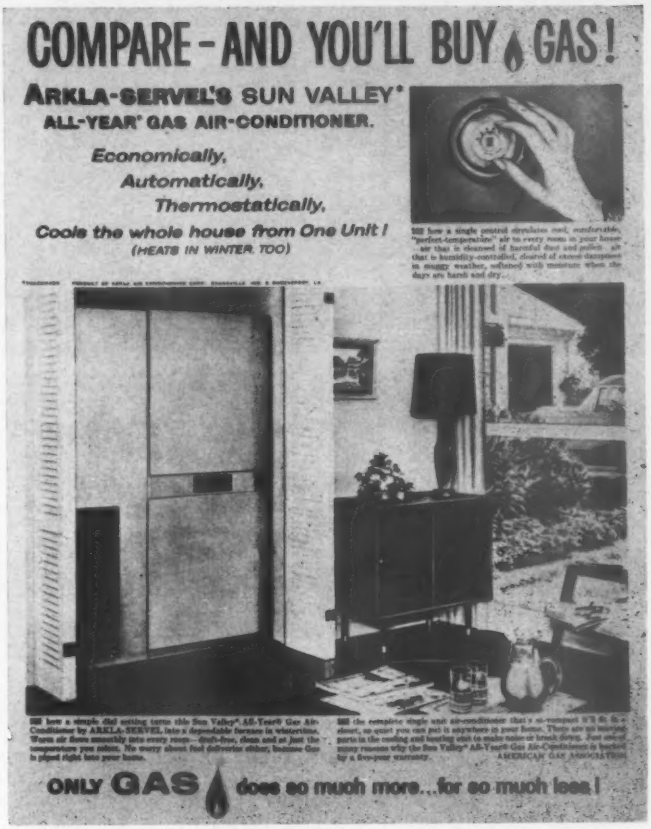
This summer, Carrier plans to hold a service school—and possibly a sales school in the southwest on its new gas unit. Carrier-Bryant will be in production in time for the 1959 market.

At the Southwest Research Institute showing of the new A. G. A. absorption-plus pump prototype, ten manufacturers were present. These included Arkla, Carrier, American Standard, Whirlpool, Rheem, A. O. Smith, Borg-Warner, Stewart Warner, Surface Combustion and Philco. Another important name, Worthington, was not able to be present but expressed strong interest.

A. G. A.'s accelerated air conditioning research program has as its goal the development of at least three projects into operating laboratory prototypes for dem-

(These remarks are excerpted from an address given by Mr. Selzer at four meetings to date—the Pacific Coast Gas Association Air Conditioning Symposium at Phoenix, Ariz., the Metropolitan House Heating Council in New York, the Indiana Gas Association meeting in French Lick, Ind., and the Philadelphia Gas Heating and Air Conditioning Council session in Philadelphia. Mr. Selzer also will make this talk at the Eastern Gas Sales Conference in New York May 12 and during the Midwest Gas Sales Conference in Chicago May 19-21.)


CONSUMPTION OF GAS IN A DALLAS OFFICE BUILDING
MCF
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Average gas usage by months, after air conditioning.
Average gas usage by months, prior to air conditioning.
SOURCE: LONE STAR GAS COMPANY



onstration to interested manufacturers at the earliest possible date. The purpose of such demonstrations is to show the manufacturers the feasibility of the air conditioning prototypes as well as to provide all technical details. In this way, the manufacturer can in turn take over the project and carry it through field testing to ultimate commercial production.

Good progress along these lines has been and is being made in the following:

1. Improved absorption unit at the Southwest Research Institute. This unit utilizes a double-effect generator and circulating pump and has shown a co-efficient of performance of .75 during test. Preliminary licensing negotiations are now under way.

2. Free Piston Engine-Compressor Unit—This was demonstrated to interested gas industry and engine manufacturers in February as part of the A. G. A. research program. The unit has reached the laboratory prototype stage and has been operating in a refrigeration system at a co-efficient of performance of .65 at three tons capacity. It offers the potential of design simplicity, low first cost, attractive efficiency, low maintenance and low noise level. Currently, it is hoped that a manufacturer, either engine or appliance, will take it over and carry it through to commercial production.

Thus, depending upon what type of manufacturer picks up the project, it is possible that components would be available commercially for other manufacturers to fabricate as add-on air conditioning units for their present gas heating equipment.

3. Lizenzia (Swiss) Unit—This open cycle absorption system air conditioning unit was demonstrated to manufacturers late in 1957 and licensing negotiations are now underway. Additional development work has been carried out since the demonstration which, it appears, will make it very attractive from the standpoint of first cost and operating characteristics.

4. Engine-Compressor Unit—This combined internal combustion engine-compressor unit, under development with D. W. Onan and Sons, Inc., continues to run ahead of schedule. Engine-compressor testing has begun and a complete air conditioning unit prototype design has been completed. It appears that a limited prototype field test may be possible this year.

5. Long-Life Engine Development—This test prototype engine, incorporating the improvement developed by Continental Motors, now has in excess of 4,000 operating hours. A limited number of the engines will be field tested this summer in air conditioning units. Further development on such components as ignition systems is continuing.

6. Open-Cycle Wet 'Sorption System—Laboratory development work is almost completed. It would appear to be of minor interest pending receipt of final results due to need of lower temperature cooling water than is available in many parts of the country to obtain a reasonable co-efficient of performance.

7. Supplementing the above projects which are being carried to the operating prototype stage, the following A. G. A. research projects are under way and will be continued:

1. Search for new absorption refrigeration fluids.
2. Unitary design of 25 ton engine-driven air conditioning unit.
3. Study of fluids for jet-type units.
4. Evaluation of external-combustion air pump.

In his 1957 Report, R. A. Puryear Jr., President, Alabama Gas Corp., stated, "During five summer months of 1957, we operated at a loss of one and a half million dollars before taxes. Studies show that if there had been 26,000 gas-fired air conditioning units operating in our territory, that deficit would have been wiped out and over 700,000 dollars would have been added to our annual net." That is what gas air conditioning means to Mr. Puryear's company. You can best figure the additional net it will mean to your own company.

No longer can the gas industry figure on attaching the cooling load simply as a desirable adjunct to house heating. Rather, our industry must attach the cooling load as an absolute necessity in holding its house heating load.

Electric utilities are now facing a peak load during hot summer afternoons which is dangerously straining their service and generating capacities.

Electric companies in the largest eastern and northern cities face demand crises during almost every summer heat wave. And their only solution is to fill-in their winter valley with heating to create an even year-round demand for their fuel.

You can be sure the electric utilities are going after the winter heating market with every means at their disposal. The National Electric Manufacturers Association estimates that there are now nearly half a million houses in the United States completely heated by electricity. They further estimate that there will be a million electrically heated homes by 1960 and three million by 1966. Manufacturers of electric heat pumps expect their sales to rise to 75,000 units a year by 1960 and 250,000 by 1964. This adds up to one out of every six homes built.

One gas air conditioning unit in an average Southern city consumes more gas than any other single appliance in the home. One gas air conditioning unit in an average Southern summer uses more gas than 25 ranges, or 23 refrigerators, or 17 water heaters. It figures, then, gas utilities that have aggressively promoted and sold gas air conditioning have found their efforts in this field immensely profitable from the standpoint of increased summer load.

It has also been found that the year-round air conditioning customer, as a heating customer, is considerably better than the average. In the South, he uses more gas for cooling than for heating.

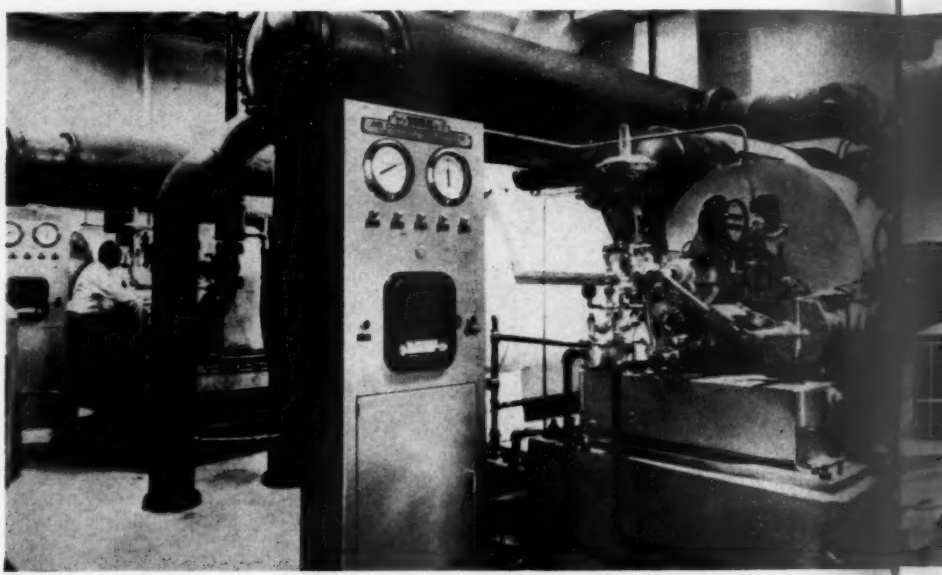
Of course these figures change the further North you go. However, it is just as important to gas utilities in New England to abolish the summer slump as it is to the companies in the South.

Additional net revenue due to gas air conditioning varies, of course, from community to community. Approximate gas usage, assuming a typical distribution of available gas air conditioning equipment in any given community, is 23-24 cubic feet per ton per hour of full operation.

Average cooling hours times your total tonnage times 23-24 times your local rate gives you a good idea of how valuable the air conditioning load is. Columbia Gas estimates a total net increase of $55.00 per year per 3½ ton unit installed on their lines.

From A. G. A.'s survey of utility air conditioning programs, it appears that gas companies with the most successful sales programs are those in which top management has clearly defined for all employees the importance of the company's air conditioning program. There is no substitute, to judge from successful case histories, for this clear definition by top executive management . . . of the company's vital interest in attaining the gas air conditioning goals it has set.

Every gas utility interested in air conditioning can profit from analyzing du



This York large-capacity central gas air conditioning unit is typical of those used in industrial and/or commercial buildings

Pont's 1956 "National Central Residential Air Conditioning Survey." (Available free from Don C. McSorley, advertising department, du Pont, Wilmington, Del.)

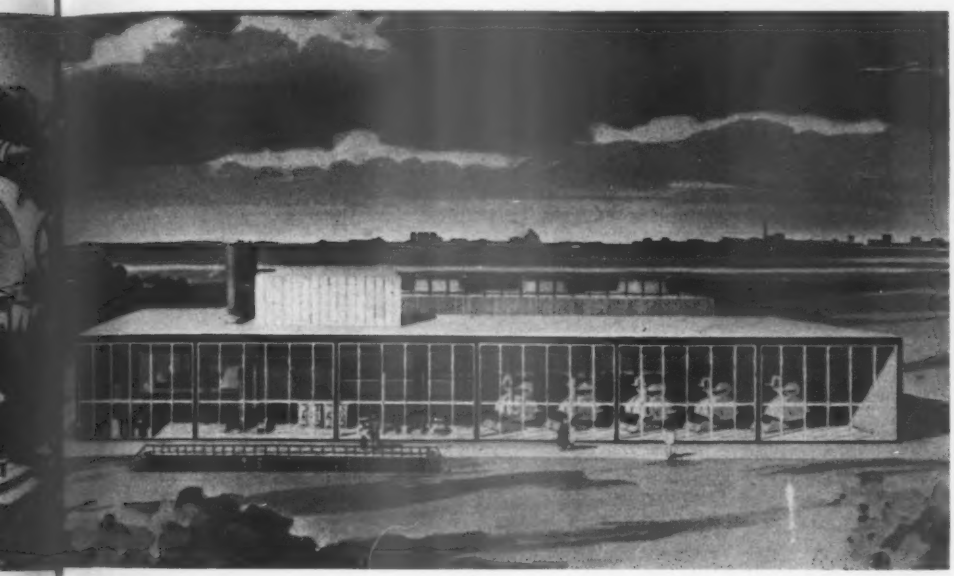
The most outstanding fact to emerge from du Pont's survey is that the best prospects for central air conditioning are the neighbors of present owners of central systems. When one or two central units appear in a neighborhood or development, their neighbors become, in a short time, excellent prospects.

A number of characteristics of owners vs. non-owners of central air conditioning emerge from the du Pont survey. Fifty-eight per cent of owners of central air conditioning had family income over $10,000. Forty-three per cent of owners live in homes that cost over $30,000; 25 per cent cost $20-30,000. However, owners seemed to be mainly in the 35-55 year age group (58 per cent of them). There appears to be less acceptance of central air conditioning by people above 55, which is similar to the findings of the 1955 Room Air Conditioning Study.

Another significant fact to emerge from the du Pont Survey is that to date central air conditioning has been bought —not sold!

Model houses proved to be one of the best ways to sell a prospect on the advantages of a centrally air conditioned home. In a model home the public can literally inhale the advantages of "climate control" living—particularly during the hot, humid summer months. Central air conditioning also proves an excellent means of helping the builder sell his house.

Another conclusion to emerge from the du Pont survey was that purchasers chose central air conditioning because "it will be the expected thing in homes of the future." Eighty-six per cent of the owners of central air conditioning indicate a high degree of satisfaction. There are 270,000 households in America with definite buying plans for central air conditioning—and this, with the industry still in its infancy.



New York International Airport power plant is to get the world's largest installation of automatic gas absorption refrigeration machines

Turning now to the means used successfully by utilities in making air conditioning sales, let's start first with rates. Special summer rates for air conditioning have proven an effective sales tool, particularly in competing with special winter heating rates offered by the electric utility.

Columbia Gas with a normal rate of 7 cents per therm has a summer air conditioning rate for larger usage that averages 4½ cents per therm. They consider this competitive with electricity at 2 cents per KWH.

For years gas utilities let the higher initial cost of the Servel unit serve as an excuse for doing nothing. But high prices have not slowed our competition's efforts to sell the heat pump. Nor have high prices stopped the sale of gas units where the utility has an aggressive sales program. Cadillacs, Imperials and Lincolns are being sold by the thousands. And now, the present 20 per cent reduction in Arkla prices makes our sales job easier. Pricing of gas air conditioning units by utilities has been adjusted in the main to local market situations. Certain very aggressive utilities have subsidized the sale of direct-fired absorption units from $200 when sold to the public . . . to $400 when sold to a dealer or builder.

Subsidy will no longer be an issue as increased volume of production and new manufacturer designs reduce the cost of gas units. However, our first concern is the present market—not future possibility. The consensus seems to be that if subsidy is necessary, the wisest policy is to do what is necessary today and so hold a load that is absolutely vital to the industry's growth and future profit.

Some utilities with well established and successful programs, are now able to sell gas absorption units for a reasonable mark-up. This is the long term goal of most utility programs. This would automatically attract dealer interest and participation in gas air conditioning sales similar to today's gas house heating situation.

A new plan gaining in popularity is the leasing of air conditioning equip-

ment to a commercial or industrial owner. Leasing equipment has considerable sales appeal in commercial establishments where the payments on air conditioning equipment are a deductible item from the lessee's income tax as operating costs. No matter what plan you use, the true measure of success is sales, of course.

Air conditioning promotion and advertising expenditures in the utilities replying to the recent A. G. A. survey ran from 8 cents to 30 cents per meter with an average around 12 cents to 15 cents per meter. Of course, these expenditures are based on a much lower sales volume than will occur in 1958 and the years of growth ahead.

Practically all of the utilities surveyed use some form of direct mail to sell air conditioning. Mailing lists used included architects, builders, doctors, lawyers, warm air heating customers and new residential meters. Some utilities covered every residential customer at least once a year with a mailing on the availability and advantages of gas air conditioning. Many companies prepared their own direct mail pieces, although for the future both Arkla and A. G. A. will have folders available.

Most utilities have found newspaper advertising an effective means of conditioning the public generally—plus generating specific leads. Co-op advertising in radio and TV has been most effective where a dealer set up exists. Arkla will also have radio and TV spots available. Some utilities have felt "mass media" (radio, TV and newspaper) too much a "buck shot" approach for the limited number of sales expected. Based on 1957 sales of residential air conditioning, this would certainly be the case. But 1958 sales will be three or four times those in 1957. This same mushrooming growth is to be expected in future years. "Mass media" advertising pre-conditions your customers, both residential and commercial, for tomorrow's sales. The question for the utility to decide locally is when its local area sales will achieve the enviable rate already being set in some areas today which justifies the use of mass media. The use of "mass media" is more a question of timing than advisability.

In conjunction with model homes, many companies have developed yard signs, posters for the unit, hand-out brochures and folders—as well as actual demonstrations by a salesman or home service representative on the spot. This leads into the whole field of builder promotions—such as press parties, charity or civic sponsorship of the model home, highway signs, etc.

Home shows are also an excellent means of telling architects, builders and consumers about gas air conditioning. Surveys have revealed time and again how few people even know of the existence of gas air conditioning—much less its many advantages.

A number of utilities report success in displaying working equipment in company store locations and through parties for the press and builders in employee homes equipped with gas units.

The speculative builder is interested primarily in "What's it going to cost me?" However, as housing has moved into a buyers' market he has also asked, "Will it help me sell my houses?" Builders across the country have been told by experience, example and their leading trade magazines that central air conditioning is one of their best sales tools. For this reason, gas utilities are reporting constantly increasing success in selling gas units to builders, particularly where the utility takes a vigorous and aggressive role in helping the builder sell his gas air conditioned homes.

Plan 40 ads

To precondition the market for your architect and builder salesmen, A. G. A. in 1958 will run 40 full page ads on gas air conditioning in national publications. This advertising schedule will saturate the architect and builder field with gas air conditioning sales messages.

Most utilities offer free layout service on all new construction for both the installation of the equipment as well as the duct work. Many utilities offer site delivery and will even subcontract the sheet metal work if necessary to make the sale. Some utilities don't require the builder to pay for the unit until the house is sold.

A reputation for good prompt servicing of equipment can be one of the strongest sales tools a gas utility brings into the air conditioning market.

Utility supervision of the installation of all residential and many small commercial installations, is an important means of assuring customer satisfaction. The new direct-fired gas units, with their excellent record of performance when properly installed, are the best basis for any service program. By correct installations, sizing, and engineering, the need for servicing is naturally cut tremendously.

Many gas utilities began their air conditioning programs by offering free service. This sometimes proved to be a costly operation in the days before the gas unit was fully perfected. As pointed out, malfunction of the initial equipment does not seem to have fazed our competition.

One of the most encouraging factors in the gas air conditioning picture is the excellent performance record of the Arkla direct-fired gas absorption equipment. Out of the first 1600 units produced, only three had to be returned to the factory due to mechanical failure. This is a quality control record comparable to the watch industry—and far beyond that experienced in most manufacturing.

Quite a number of utilities are now offering their customers a service contract as soon as the unit is installed. The average charge for a year on a 3-ton job is around $25. Cost of servicing a 3-ton unit varies from a reported average in New England of $22 per year per customer on all models including older boiler units to $18 per year per unit in Texas. There is a much longer cooling season there and water towers are used almost exclusively. The New England case reported was almost entirely for water valve installations.

On larger commercial jobs some utilities report a "back-up" service assistance policy but not normal full service. Other utilities schedule twice yearly air conditioning maintenance schools to train maintenance engineers for owners of larger absorption units.

Some utilities find it advantageous to sell preventive maintenance service policies on larger installations. One sample showed a price for single units of $66 and on multiple installations $66 for the first unit plus $48 for each additional unit.

In lieu of a preventive maintenance policy an inspection policy may be sold to the customer. The intent of this policy is to provide professional engineering experience and recommendations to the owner with complete analysis of his heating and cooling system. This policy provides the owner with a complete physical inspection of his installation several times a year and a report on the utility's findings. No maintenance or service is rendered under this type of inspection policy.

Gas heated homes up 1.1 million

At the end of 1956, there were 16,730,000 gas househeating customers in the U.S. At the end of 1957, there were 17,924,000—an increase of 7.1 per cent. This increase of 1,194,000 has pushed up the saturation of househeating customers among residential users, from the previous 60.3 per cent to 62.5 per cent.

These figures exclude LP-Gas and dwelling units in multiple structures receiving their heat from one central gas furnace. Also, they represent dwelling units, rather than pieces of equipment.

During the next three heating seasons the gas industry should add another 3.6 million gas househeating customers. New dwellings are expected to account for 2.2 million of these installations, with the balance of 1.4 million customers representing installations in existing dwelling units.

The East North Central area continues to lead all other regions in anticipated gains during the next three heating seasons. New installations in this region are expected to reach 935,000 additional dwelling units by the end of the 1960-61 heating season. Of this total, 58 per cent will be installed in existing dwellings.

The Pacific region, which ranks second, expects to add 637,000 new gas-heated dwelling units during the next three seasons, with 87 per cent attributable to new dwellings constructed during that period.

In the Middle Atlantic states, 543,000 new heating installations will be added —48 per cent in new dwellings, and 52 per cent in existing dwellings—by the

ESTIMATED U. S. GAS HOUSEHEATING CUSTOMERS, END OF 1957 BY STATE

(Thousands of Customers)

	Existing Residential Customers November 30, 1957		Estimated Number of Gas Installations During December 1957	Estimated Gas Househeating Customers as of December 31, 1957
	Total	Househeating		
United States	28,669	17,793	131	17,924
New England	1,537	273	3	276
Connecticut	352	48	1	49
Maine	36	3	a	3
Massachusetts	944	179	2	181
New Hampshire	36	9	a	9
Rhode Island	149	34	a	34
Vermont	20	a	0	a
Middle Atlantic	7,035	2,091	19	2,110
New Jersey	1,304	261	4	265
New York	3,749	842	9	851
Pennsylvania	1,982	988	6	994
East North Central	6,405	3,492	40	3,532
Illinois	2,001	739	6	745
Indiana	676	241	3	244
Michigan	1,324	744	12	756
Ohio	1,924	1,590	15	1,605
Wisconsin	480	178	4	182
West North Central	2,271	1,692	12	1,704
Iowa	364	260	1	261
Kansas	451	433	3	436
Minnesota	409	292	3	295
Missouri	728	451	4	455
Nebraska	237	198	1	199
North Dakota	33	18	a	18
South Dakota	49	40	a	40
South Atlantic	2,113	1,296	11	1,307
Delaware	57	13	a	13
District of Columbia	164	67	1	68
Florida	186	114	1	115
Georgia	431	369	2	371
Maryland	489	218	2	220
North Carolina	87	43	1	44
South Carolina	59	23	a	23
Virginia	311	149	3	152
West Virginia	329	300	1	301
East South Central	1,187	1,001	5	1,006
Alabama	374	293	2	295
Kentucky	351	278	1	279
Mississippi	219	217	1	218
Tennessee	243	213	1	214
West South Central	3,195	3,188	18	3,206
Arkansas	233	233	2	235
Louisiana	573	567	3	570
Oklahoma	509	509	3	512
Texas	1,880	1,879	10	1,889
Mountain	963	919	7	926
Arizona	228	219	1	220
Colorado	281	270	a	270
Idaho	5	5	2	7
Montana	99	94	a	94
Nevada	18	17	a	17
New Mexico	139	139	1	140
Utah	139	124	3	127
Wyoming	54	51	a	51
Pacific	3,963	3,841	16	3,857
California	3,815	3,765	13	3,778
Oregon	82	43	1	44
Washington	66	33	2	35

a Less than 500 customers.

ANTICIPATED ADDITIONAL GAS HOUSEHEATING CUSTOMERS,[b] 1958-1961, BY STATE

(Thousands of Customers)

	1958-1959 Heating Season			1959-1960 Heating Season			1960-1961 Heating Season			
	Total	New Dwelling Units	Existing Dwelling Units	Total	New Dwelling Units	Existing Dwelling Units	Total	New Dwelling Units	Existing Dwelling Units	Proportion of Industry Reporting
United States	1,150	719	431	1,273	748	525	1,259	771	488	95
New England	52	12	40	56	13	43	59	14	45	95
Connecticut	15	4	11	16	4	12	17	5	12	99
Maine	a	a	a	a	a	a	a	a	a	85
Massachusetts	26	6	20	27	7	20	28	7	21	95
New Hampshire	2	1	1	2	1	1	2	1	1	54
Rhode Island	9	1	8	11	1	10	12	1	11	95
Vermont	a	a	a	a	a	a	a	a	a	62
Middle Atlantic	191	88	103	176	88	88	176	87	89	98
New Jersey	38	27	11	39	28	11	39	28	11	100
New York	93	30	63	80	30	50	80	30	50	99
Pennsylvania	60	31	29	57	30	27	57	29	28	96
East North Central	250	114	136	357	136	221	328	146	182	98
Illinois	45	18	27	106	14	92	86	17	69	99
Indiana	12	5	7	30	11	19	29	11	18	91
Michigan	76	22	54	105	38	67	98	41	57	99
Ohio	87	55	32	86	58	28	86	63	23	98
Wisconsin	30	14	16	30	15	15	29	14	15	97
West North Central	91	45	46	115	49	66	117	49	68	87
Iowa	20	5	15	36	9	27	40	9	31	79
Kansas	8	8	a	8	8	a	8	8	a	83
Minnesota	23	11	12	26	11	15	27	11	16	94
Missouri	25	15	10	33	15	18	31	15	16	90
Nebraska	6	4	2	6	4	2	6	4	2	85
North Dakota	5	1	4	2	1	1	2	1	1	98
South Dakota	4	1	3	4	1	3	3	1	2	100
South Atlantic	92	63	29	95	65	30	98	67	31	87
Delaware	2	1	1	2	1	1	2	1	1	93
District of Columbia	3	1	2	3	1	2	3	1	2	100
Florida	9	6	3	9	6	3	9	6	3	45
Georgia	20	17	3	20	17	3	22	19	3	86
Maryland	22	17	5	22	17	5	23	17	6	96
North Carolina	8	4	4	11	5	6	12	6	6	72
South Carolina	5	1	4	5	1	4	5	1	4	77
Virginia	15	11	4	15	12	3	15	12	3	92
West Virginia	8	5	3	8	5	3	7	4	3	93
East South Central	61	41	20	58	39	19	58	39	19	86
Alabama	23	12	11	23	13	10	23	13	10	77
Kentucky	18	14	4	18	14	4	18	14	4	90
Mississippi	11	10	1	9	8	1	9	8	1	87
Tennessee	9	5	4	8	4	4	8	4	4	93
West South Central	137	128	9	136	127	9	138	129	9	90
Arkansas	11	7	4	9	6	3	9	6	3	87
Louisiana	27	24	3	26	23	3	26	23	3	84
Oklahoma	14	14	a	15	15	a	15	15	a	88
Texas	85	83	2	86	83	3	88	85	3	93
Mountain	73	49	24	69	47	22	62	47	15	86
Arizona	17	15	2	17	14	3	17	14	3	90
Colorado	16	14	2	16	14	2	15	14	1	86
Idaho	14	1	13	10	1	9	8	1	7	100
Montana	4	3	1	5	1	4	1	1	a	81
Nevada	1	1	a	1	1	a	1	1	a	47
New Mexico	8	8	a	7	7	a	6	6	a	86
Utah	11	6	5	12	8	4	12	8	4	100
Wyoming	2	1	1	1	1	a	2	2	a	57
Pacific	203	179	24	211	184	27	223	193	30	99
California	179	173	6	182	176	6	190	183	7	99
Oregon	9	2	7	11	3	8	13	4	9	99
Washington	15	4	11	18	5	13	20	6	14	97

a Less than 500 customers.
b Reflects expectations of entire gas industry.

end of the 1960-1961 heating season.

The West South Central Division anticipates 411,000 new heating installations, and ranks fourth among the nine census divisions. In this region new dwelling units are expected to account for 94 per cent of new installations in this three-year period.

The table on page 35 shows the trend of the total number of customers of companies under complete or partial restrictions from 1950 to date. While 1957 shows an increase of 100,000 customers served by companies under some form of restrictions, this does not indicate a change in the trend toward relaxation of restrictions. The reasons are that greater coverage was attained in 1957 than ever before, and the reporting companies served a greater number

(Continued on page 35)

This is the Atlantic City Auditorium where the 1958 A. G. A. Convention will be held

Convention plans progressing

There may be "Standing Room Only" signs along Hotel Row at A. G. A. Convention time this fall. More than a thousand pre-registrations have been received so far for the Convention period, Oct. 13-15. All suites in the Claridge and Shelburne hotels have already been booked, and the other hotels are going fast under the new pre-registration system. Hotels specifically designated as Section headquarters are the following: Accounting, Sheraton-Ritz Carlton; General Management, Dennis; Industrial and Commercial Gas, Traymore; Residential Gas, Traymore; and Operating, Claridge.

Plans for the convention are well ahead of schedule, and 11 general sessions speakers have been signed up to date. A. M. Beebee of Rochester Gas and Electric Corp., chairman of the General Convention Planning Committee, reports that this committee "is designing this Convention to be the highlight of one of the most important years in our industry's history.

"Our industry," continues Mr. Beebee, "has a responsibility and opportunity to play an ever-increasing and vital part in building a greater America. To do this requires a careful analysis of our problems and opportunities.

"The program has been especially planned to provide A. G. A. membership with the latest information on the economic, political, legislative, and regulatory influences affecting the gas industry, and in addition, to discuss in detail the major problems confronting the gas industry in particular."

The three general sessions, each with a separate theme, have been scheduled to tie in with these aims, and with the over-all theme, "Gas Builds A Greater America."

The first day will start with an address by A. G. A. President Robert W. Otto, Laclede Gas Co. Next, three experts in the social sciences will give presentations in line with the first day's theme, "What's Ahead." These presentations will cover the economic picture, the labor situation, and the role of government and business in America's future.

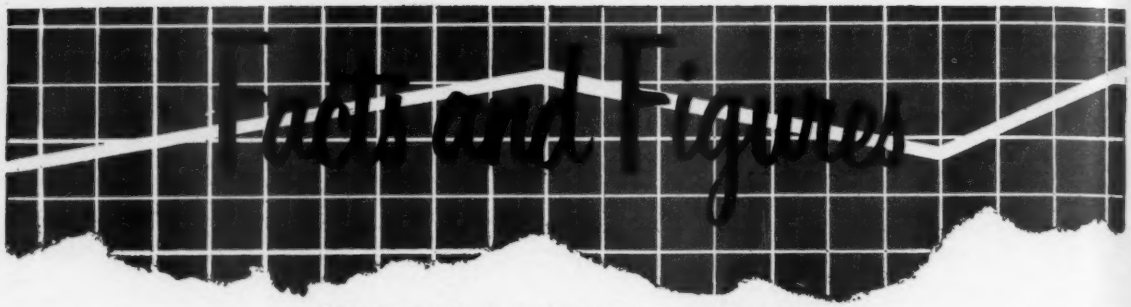
"Problems to Think About" is the theme for the second general session. Speakers will bring these problems to light and attempt to tackle them, in talks on financing economics, regulatory trends, public relations, and government in business.

Starting the third general session will be special recognition of associated organizations. The theme for this session is "Meeting Our Opportunities." Of the four scheduled speakers, two will cover key applications of gas—refrigeration and air conditioning. The concluding two will discuss means of expanding sales, and new industry developments.

Highlight of the third day will be the luncheon, on the theme "A Time for Greatness," with A. G. A. Managing Director C. S. Stackpole as luncheon speaker. Strong focus will be brought on the theme for the third day in Mr. Stackpole's talk, "Making the Most of Our Opportunities."

Delegates to the convention will have the opportunity to see the dramatic progress that has been made in the gas utilization field during the past two years, by visiting the novel A. G. A. "Parade of Progress" exhibit. Part of the exhibit will be the annual display of New Freedom Gas Kitchens and Laundries.

As stated by Mr. Beebee, "Our program is designed to provide an up-to-date appraisal of the most recent developments in our industry which will enable it to meet the conditions under which we must operate. The Convention, therefore, provides an opportunity for A. G. A. members to understand these complex problems better, and become aware of what our industry can do to meet them successfully—thereby assuring the best operation of each individual company."



Prepared by A.G.A. Bureau of Statistics

Total sales of the gas utility and pipeline industry to ultimate consumers during February 1958 amounted to 8,749 million therms, an increase of 5.9 per cent over sales of 8,260 million therms in February of last year. This gain in sales for February is relatively moderate because the decrease in sales to industrial consumers offset the gains made by the greater househeating demand resulting from the colder weather.

February industrial sales amounted to 3,028 million therms, a decline of 2.3 per cent from the 3,100 million therms sold in February 1957. Industrial production, as measured by the Federal Reserve Board index, was down 11.0 per cent from the same month last year. The index of industrial production (1947-1949 = 100) for February 1958 was 130, 16 points less than the index for February 1957. The Association's February index of gas utility and pipeline sales is 250.0 (1947-1949 = 100).

Housing starts continue to dominate the appliance picture outlook. The Department of Labor indicated that 79,000 housing units were started in March. This is 9.2 per cent less than the 87,000 units begun in March 1957, but nevertheless is 21.6 per cent higher than February 1958 starts. First quarter total housing starts were 213,000, down from the 217,000 in the same period last year.

Appliance data relate to manufacturers' shipments by the entire industry compiled by the Gas Appliance Manufacturers Association. Industry-wide electric appliance statistics are based on data compiled by the National Electrical Manufacturers Association and are reprinted by GAMA in its releases. Data relating to oil-fired burner installations are compiled by *Fuel Oil and Oil Heat*. Data on both gas and electric dryer shipments are released regularly by the American Home Laundry Manufacturers Association.

SALES OF GAS AND ELECTRIC RESIDENTIAL APPLIANCES DURING MARCH 1958

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	March		February		First Two Months Ending Feb. 28,1958	
	Units	Per Cent Change	Units	Per Cent Change	Units	Per Cent Change
RANGES (including built-ins)						
Gas	150,000	—16.4	134,500	—16.8	262,900	—15.5
Electric	n.a.	n.a.	108,700	—14.9	217,700	—20.0
WATER HEATERS						
Gas	228,100	+ 0.7	211,500	+ 1.6	448,600	+ 6.0
Electric	n.a.	n.a.	58,000	— 7.3	119,700	+ 0.7
GAS HEATING—Total	61,500	— 2.2	53,600	+ 0.4	113,600	0.0
Furnaces	50,200	+ 2.7	41,700	0.0	89,200	— 0.2
Boilers	5,300	—10.2	5,200	0.0	10,400	0.0
Conversion Burners	6,000	—25.9	6,700	+ 3.1	14,000	+ 1.4
OIL-FIRED BURNER						
Installations	32,712	+ 3.9	32,996	—11.2	75,738	— 6.6
DRYERS						
Gas	n.a.	n.a.	20,930	—44.1	51,170	—30.9
Electric	n.a.	n.a.	57,650	—25.2	126,040	—31.9

GAS SALES TO ULTIMATE CONSUMERS BY UTILITIES AND PIPELINES DURING FEBRUARY

(MILLIONS OF THERMS)

	1958	1957	Per Cent Change
Month of February			
All types of Gas	8,749.3	8,260.0	+ 5.9
Natural Gas	8,409.4	7,967.2	+ 5.6
Other Gases	339.9	292.8	+16.1
Twelve Months Ending February 28			
All types of Gas	76,820.5	73,650.0	+ 4.3
Natural Gas	74,486.1	70,896.0	+ 5.1
Other Gases	2,334.4	2,754.0	—15.2
February Index of Monthly Utility			
Gas Sales (1947-49 = 100)	250.0	236.0	+ 5.9

PERTINENT BUSINESS INDICATORS, FEBRUARY

(WITH PER CENT CHANGES FROM CORRESPONDING PERIOD OF THE PRIOR YEAR)

	February			January		
	1958	1957	Per Cent Change	1958	1957	Per Cent Change
Industrial activity (1947-49 = 100)	130	146	—11.0	133	145	—8.3
Consumer prices (1947-49 = 100)	122.5	118.7	+ 3.2	122.3	118.2	+3.5
Housing starts, Non-farm (thousands)	65.0	65.8	— 1.2	69.0	63.0	+9.5
New private construction expenditures ($ million)	2,262	2,226	+ 1.6	2,364	2,324	+1.7
Construction costs (1947-49 = 100)	164.3	156.4	+ 5.1	164.2	156.7	+4.8

Revisions to 16 standards adopted

The ASA Sectional Committee, Project Z21, A. G. A. Approval Requirements Committee, in session to adopt revisions, additions to 16 ASA standards

Proposed revisions and additions to 16 current American Standards for gas appliances and accessories were adopted by the ASA Sectional Committee, Project Z21, A. G. A. Approval Requirements Committee, at its 70th meeting March 27 at the A. G. A. Laboratories. Proposed revisions also were adopted to the American Standard covering the installation of domestic gas conversion burners.

The proposed revisions to each of the 16 current American Standards will be submitted to the American Standards Association, Inc., for approval as American Standard.

The new requirements for gas appliances apply to boilers, central furnaces, floor furnaces, vented recessed heaters, free standing domestic ranges, built-in domestic cooking units, clothes dryers, water heaters, side-arm type water heaters, room heaters, incinerators, unit heaters and duct furnaces. In the accessory field, the revisions apply to manually operated gas valves, relief and automatic gas shut-off valves for use on water heating systems, and domestic gas conversion burners.

The new requirements are to become effective Jan. 1, 1959. They will be applied to the above types of equipment received for certification by the Laboratories following the effective date. However, appliance and accessory manufacturers may have tests performed by the A. G. A. Laboratories under the revised provisions anytime in advance of the effective date.

Most extensive revisions were made in the listing requirements for relief and automatic gas shut-off valves for use on water heating systems. Essentially, the provisions represent a complete rewrite of the previous standard. Of particular importance are the minimum dimensions and flow areas specified. Inlet and outlet connections of combination temperature and pressure relief valves and of temperature relief valves having rated capacities of over 15,000 Btu per hour are not to be smaller than a ¾ inch N.P.T. threaded connection. The cross-sectional dimension of any flow way of such devices is not to be less than 3/16 inch and no device is to have an orifice less than a 7/16 inch diameter. Temperature relief valves, or elements of combination devices, will be rated on the basis of steam discharge.

The requirements covering automatic gas shut-off devices have been expanded considerably to bring the provisions up to date and also to provide coverage for units of the switch type used with millivoltage circuits.

PROPOSED AMERICAN STANDARD REQUIREMENTS PUBLICATIONS COVERING GAS APPLIANCES AND ACCESSORIES, AVAILABLE IN TYPEWRITTEN FORM, WHICH BECOME EFFECTIVE JANUARY 1, 1959.*

		Price
CENTRAL HEATING APPLIANCES	Volume I — Boilers (Addenda Z21.13.1b)	$ .40
	Volume II — Furnaces (Addenda Z21.13.2b)	.40
	Volume III — Floor Furnaces (Addenda Z21.13.3b)	.25
	Volume IV — Recessed Heaters (Complete Text Z21.13.4)	.50
DOMESTIC RANGES	Volume I — Free Standing Units (Addenda Z21.1.1b)	.25
	Volume II — Built-In Domestic Cooking Units, (Addenda Z21.1.2b)	.25
WATER HEATERS	Volume I — Water Heaters (Addenda Z21.10.1b)	.25
	Volume II — Side-Arm Types (Addenda Z21.10.2b	.25
CLOTHES DRYERS	(Addenda Z21.5b)	.25
ROOM HEATERS	(Addenda Z21.11b)	.25
DUCT FURNACES	(Complete Text Z21.34)	.50
INCINERATORS	(Addenda Z21.6a)	.10
GAS VALVES, MANUALLY OPERATED	Listing Requirements for Complete Text Z21.15)	.50
RELIEF VALVES	(Complete Text Z21.22)	.50
UNIT HEATERS	(Addenda Z21.16a)	.25
CONVERSION BURNERS	Listing Requirements for (Complete Text Z21.17)	.50
CONVERSION BURNERS	Installation of (Complete Text Z21.8)	.50

*Copies of these publications may be ordered from A.G.A. Laboratories 1032 East 62nd St. Cleveland 3, Ohio

In a number of the revised approval standards a statement has been added to the effect that appliances approved under the standard are to be newly produced units, constructed entirely of new, unused parts and materials. This addition is in line with the basic premise of the Appliance Approval Program from the start in 1925. Extensive revisions strengthening the provisions covering electrical components and wiring have also been made in a number of the revised standards.

In the revised electrical revisions for domestic gas clothes dryers, a specification requires the use of a three-conductor supply cord with a plug of the parallel blade grounding type. While the specification becomes effective Jan. 1, 1959, the Approval Requirements Committee also approved the recommendation that the specification be applied to all clothes dryers produced after July 1, 1959, regardless of the date of any previous approval.

The use of three-conductor supply cords of the grounding type for connecting appliances with electrical controls has been increasing in recent years and is now specified in the National Electrical Code. This type of grounding means has become standard on power tools, air conditioners and washing machines and it is believed that with this arrangement, the chances of a clothes dryer not being effectively grounded are much less than when relying on the installer to make this attachment.

Dryer manufacturers favored retroactivity of the specification as it is in line with the agreement reached by the Engineering Committee of the American Home Laundry Association and is being applied to all home laundry equipment.

A revised method of measuring the drying chamber temperature of a gas clothes dryer has also been developed. It is aimed to prevent discoloration through over-temperature conditions. In this test procedure, small aluminum swatches, coated with a temperature sensitive solution that changes state at 250° F, are stapled to a number of the cloth pieces forming the test load. Experimental tests performed at the A. G. A. Laboratories indicated that the new test procedure provides a reliable means to determine if the temperature in the drying chamber exceeds 250° F.

The wall and floor temperature test for free standing type domestic gas ranges has been extensively revised to prohibit spacers on the sides of ranges classified as flush-to-wall types. The revisions also permit approval of insulated ranges with a 1-inch spacing or flush at the back, with ½-inch spacing at the sides; eliminate the classification of uninsulated ranges; and provide for measurement of temperature on vertical walls extending above the cooking top on both sides of the range and spaced from the range as specified by the manufacturer.

Volume II of the requirements for domestic ranges has been expanded to cover built-in domestic cooking units provided in combination, such as a combination of oven, broiler and top units similar to a standard domestic range.

Water heater requirements have been expanded to cover the use of a gas appliance pressure regulator. A combustion test will be made on all water heaters equipped with an appliance pressure regulator at a test pressure 12.5 per cent above normal manifold pressure. Additionally, the provisions require that where the regulator is shipped detached, the water heater is to be marked that the appliance is approved only when it is equipped with a pressure regulator.

The provisions adopted for side-arm type gas water heaters closely parallel those provisions adopted for domestic gas water heaters.

In the central heating gas appliance field, the requirements for central furnaces, boilers, floor furnaces and vented recessed heaters, have been expanded to require a "blocked port" test for multi-flame pilots. In this test, multi-flame pilots are to effect ignition of the burner gas within four seconds from the time that gas is admitted to the main burner when all the pilot flame ports except those for heating the thermal element are blocked, and the pilot gas supply is reduced to an amount just sufficient to keep the valve of the device open.

Under the present approval requirements for gas boilers, all manufacturers of approved units are required to fur-

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The operating man's role in utility finance

By CHARLES E. EBLE

President
Consolidated Edison Co. of New York

The *Financial Handbook* defines financial planning as "a forward-looking appraisal of the financial aspects of the business program, leading to decisions regarding the most effective course of action to be taken over a future period. Its fundamental objectives are to place the enterprise in a sound financial condition and to earn satisfactory profits, both for the immediate future and over the long run. Such planning is a primary responsibility of top management."

Briefly interpreting this definition in terms of the practical operation of a going public utility, and assuming a soundly operating enterprise, we can consider the financial program to relate generally to the setting of proper rates for service, to provide good service to our customers and adequate wage scales to attract the number and quality of personnel necessary to efficiently conduct the business.

It is also essential that sufficient operating income is provided to compensate for debt cost and that earnings applicable to equity investment are adequate in order to maintain a sound financial structure and thereby attract additional capital as required from time to time to meet the expansion of the business.

Now let us get to the operating man. What can he do to assist a company's financial program? The broad concept of the operating man in a regulated utility company is the person (or persons) basically responsible for the design, construction and operation of the plant and facilities necessary to meet the continuing demands for the services supplied. Obviously in a large utility company the operating man is an organized administrative group dividing the responsibilities into logical divisions, all coordinated to administer the broad operating aspects of the business.

For the purpose of this discussion, let us envision the operating man with a title of chief operating engineer or vice-president in charge of general operations reporting directly to the chief administrative officer of the company.

Let us further envision the general financial operations of the business coming under the jurisdiction of a controller or vice-president also reporting to the chief administrative officer of the company. Finally, let us conclude that the broad financial program, as is usually the case, is administered by the chief administrative officer of the company reporting to the board of directors.

At this point let us consider the manner in which the operating man can assist in the sound administration of the financial program. Within the scope of operations as we have envisioned them, it becomes obvious that he plays a very vital part in the over-all program.

I do not expect the operating man to understand all the intricacies of accounting and finance, the implications contained in reports to regulatory and taxing authorities, stockholders and other investors, or all the procedures for accumulating and presenting accounting and financial results. But the operating man must understand, in general, fundamental financial and economic concepts because he is usually the person who can contribute most by understanding them.

I believe that the operating man must appreciate the economics of new capital construction, and the considerations underlying the advantages of replacing existing plant facilities with new plant. As a guide to judgment, he must be furnished with ready measurements of both capital and expense costs as well as projected savings and revenues resulting from the application of each of the alternatives presented to him.

Thus far we have stated the subject matter in general terms. Taking it one step further the problems consist of planning for plant additions and changes in methods of operations with their ulti-

(An address given by Mr. Eble March 27 in New York before the Society of Gas Operators.)

mate effect on the over-all functioning of the enterprise in relation to revenues, together with the actual administration of these expenditures. Business organizations have developed some useful tools which aid the operating man to attain these objectives, the principal ones being:

1. Construction budget: The planning for new construction and for replacement of existing plant must be made either on an immediate or short-term basis or extended over a longer period of years. Here, the operating man applies his knowledge of the business in order to envision the relationship between investment in plant assets and anticipated net operating income. This relationship contemplates measuring the costs to be incurred because of the added investment including depreciation, taxes and financing costs in addition to costs of maintaining the new property.

Where existing plant is being replaced, the additional fixed charges are compared with potential operating savings resulting from the elimination of less efficient facilities. As a necessary requisite the operating man keeps himself currently informed as to broad changes in the art of techniques as applied to the industry. We all appreciate the fact that regulated public utilities do not always have unlimited discretion as to construction of plant assets inasmuch as plant additions must be made to meet "service" requirements. However, it is important that all of the cost factors be applied to each of the possible alternatives in order to meet these "service" requirements at the lowest possible costs consistent with the economics of the particular situation.

2. Operating budgets may be maintained upon a formal or an informal basis but all companies in order to function successfully must schedule and project revenues and expenses. It is the prime responsibilities of the operating man to carry out these schedules. We know that a regulated gas utility is not guaranteed a fair return or a profit on its investment. It is only permitted by regulatory authorities an "allowable" amount of operating income usually consisting of a fair rate of return based upon the investment in business.

It thus is necessary for the operating man to plan the business operations so that the total cost of service, including a reasonable return or profit, is sufficiently attractive to meet the competition of other fuels and services. The operating man at this point is more particularly concerned with the expenditures for operation and maintenance as opposed to the other so-called fixed charges for depreciation, taxes and financing costs.

It is in this area that economies of operation for the most part exist since, once the expenditures for investment in plant has been made, the fixed charge costs therefore continue until the facilities are retired from service. The operating man must constantly keep in mind that the maintenance of proper relationships between costs and revenues is not always a question of petitioning the regulatory body for increased rates. The charges for service must represent fair value to the consumer if the business is to continue upon a sound profitable basis.

3. Cash budgets: The operating man must recognize that the efficient carrying on of the business also includes proper relationship of the flow of cash receipts and cash disbursements and that disbursements of cash affecting both capital and operations must proceed in accordance with well planned schedules. Payments made for purchases and contracts must conform to these time schedules.

Increase in automation

4. Business Machine Systems: The past few years have seen the rapid development of business machine systems. Mechanical equipment is almost universally used for handling large volume routine accounting operations, such as customer accounting, payroll, storeroom issues, property records, cost accumulations, etc. By the mechanical processing of base information recorded on punched cards, substantial reductions in clerical work have been realized. In addition, the processing of information has been speeded up and the results are more complete and timely.

While the use of mechanical equipment has been generally associated with central accounting operations, the new systems can be used to accumulate much of the cost and statistical information that has heretofore been obtained through field clerical forces. In many cases, the field information can be obtained as a by-product of a central accounting machine operation, at little additional cost. The timeliness and completeness of the information supplied from centralized machine accounting processing is an important factor in this regard.

One can easily overlook the fact that the same machines that are used for so-called accounting operations are adaptable for operating purposes. The same machines that handle the payrolls and plant accounting can, for example, also be used for analysis of construction activity.

However, it is apparent that unless the operating man is constantly cost conscious, he will not be aware of the many advantages to be obtained from more comprehensive and faster reporting of machine accounting information. In the final analysis he is the one most familiar with the operating problems and the factors to be considered including the extent of field clerical work necessary to prepare the presently accumulated information. He should at all times be thinking in terms of new accounting machine projects that will provide him with more useful information to better carry out his operating responsibilities.

A new development in the business machine field that has greatly enlarged the operating man's opportunities by speedily obtaining more useful information is the electronic computer. The ability of the computer to eliminate clerical work has been well publicized. But the accounting office is not the only place where clerical work can be eliminated and the operating man must be alert to all its possibilities.

The computer has greatly expanded the ultimate range of the business machine system because of its greater accuracy, speed and capabilities. The computer equipped accounting system will moreover furnish quicker and better information than that produced under the punched card system. Moreover, the electronic computer is more than a business machine, it is a new and powerful engineering and operating tool. The value of this tool as an engineering aid has been heavily exploited in the aircraft and similar industries. Its use in the utility industry has been more limited, but already a lively interest is apparent.

A recent survey prepared by the American Institute of Electrical Engineers reports on 100 computer programs that are now available covering engineering and operating problems. While most of these releases bear upon the electric business, some of the reports are equally applicable to gas operations. The

opportunities in the application of a computer to operating problems lie largely in the future and the possibilities for future operation economies would appear to be very significant.

Many times, because of their high costs, mechanical and electronic equipment can be justified only as a joint venture of the accounting and operating groups. Aside from the more immediate clerical cost reductions the other advantages of machine systems in providing more extensive information within the shortest space of time may well have an even greater impact on the financial position of the company. To seize these opportunities, the continued interest and cooperation of the operating man in business machine applications are essential.

The four points I have just outlined suggest that the operating man must have some understanding of the uses which are made of the financial statements and reports. He must understand that these statements reflect in money terms the results of the transactions and operations of the company. The financial statements of regulated public utility companies are prepared pursuant to the uniform systems of accounts prescribed by regulatory authorities but these systems of accounts permit adequate latitude for maintaining cost segregation records for each operational responsibility.

It therefore also becomes necessary that the operating man understand the underlying reasons for the accumulating and classification of this financial data in order to obtain the best over-all company results. I cannot emphasize too strongly that the most effective purpose accomplished by the accumulation of operating cost information and data is to enable the operating man to conduct the operations of the business in the most efficient and economical manner.

I believe that the operating man can assist the financial program by attaching the proper importance to the correct recording of cost information and data and bringing attention to responsibility areas requests for which additional information is required.

A specific illustration of an area in which the operating man can assist a company's financial program is Con Ed's natural gas conversion program. When a supply of natural gas was made available to the company in 1951, the first obvious question was the manner in which this available supply, which was not adequate for all our system requirements, was to be utilized. This project started basically as an operating consideration. At the outset it was concluded that the supply could be used most advantageously as a substitution for oil in our manufacturing processes resulting in a sendout of so-called mixed gas having the same Btu content as manufactured gas.

Shortly after the utilization of natural gas on a mixed gas basis more natural gas became available and it therefore became necessary to consider progressively converting areas of our system to straight natural gas supply. This posed the company with operating problems involving such matters as recruiting experienced personnel that could be made available for assignment to the conversion forces, training forces, scheduling of definite areas for conversion, providing for meter readings to record consumption of mixed gas and natural gas affecting split billing cycles, etc.

Conversion costs

The financial impacts were very substantial—total costs for converting appliances and work on the system incidental thereto totalled $36 million. Funds had to be provided to finance the program. Determinations were made as to periods in which such costs could be amortized, taking into consideration related operating savings in production and distribution costs. Operating plant, including manufacturing, storage and distribution facilities, totalling $40 million of original cost, was retired from service.

The portion of this plant investment in excess of related accrued depreciation was established for future amortization. Residual losses available for income tax deductions were computed. All of these problems required close coordination of the operating men, the financial man and the administrative officers of the company.

Although our conversion program is complete, there are continuing problems relating to the economic justification for maintaining certain facilities which test the ingenuity in the areas of economics and the over-all know-how of the operating man. These problems relate to the gas supply required for expansion of the business or in substitution of manufactured high Btu gas and include determinations of maximum quantities for firm contract demands, arrangements for storage of gas in off-peak periods for deliveries in peak periods, purchases of gas directly from producers, contracts for transportation of gas, sales of gas in off-peak periods to industrial customers on interruptible basis, etc. The different possibilities must be priced out and conclusions reached in order to arrive at company policies which will produce the maximum "profit" returns in relation to revenues and investment.

I am sure that our operating people have broadened their knowledge in finance as the result of having been exposed to this project. They have become much more conscious of the importance of the financial consequences of their actions and, as a result, are much better equipped in future undertakings to assist toward the desired financial results.

Another phase of company operations in which the operating man can contribute substantially to matters that affect the financial program is in the operation of a modern continuing property record. The maintenance of property records are a requirement of the Public Service Commission for utilities in the State of New York and also in many other states. A well organized property record serves a number of important purposes in the financial operations of the company. It is the primary source of figures for the so-called rate base used by the commission in determining the rate of return in rate proceedings.

The property record supplies the original cost of the operating plant as well as the statistical data with respect to age of the property and other information used as the basis for estimating depreciation. The property record is also used as a basis for comparative studies in connection with property tax assessments, insurance values and other purposes. One basic prerequisite to the operation of a good property record is the coordination of the construction and operating functions in the field in order to currently associate the physical changes with the construction expenditures.

It is highly important that the operating man be generally familiar with the importance of the property records, the purposes which it serves and the extent to which accurate reporting on his part is required. In many instances the property record can make available to the operating man data very helpful to him

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Boys and girls learn through working in Junior Achievement companies; 120 'firms' sponsored by gas

Gas industry helps teach youth business

William Krupp (4th from left), Michigan Consolidated Gas Co., instructs achievers of the Mi Co Metals Co., Grand Rapids, Mich., in production procedures. He is one of 360 gas industry people serving as volunteer advisers to Junior Achievement companies

This month some 120 companies closely affiliated with firms in the gas industry are going out of business.

These outfits are giving pink slips to experienced management, liquidating raw material inventory, selling plant and equipment, and forwarding liquidation notices to stockholders.

In May, the companies deliberately go out of business. Inventory is sold, all debts paid. If the company has been profitable—and most of them are—the stockholders receive their investment back along with a liquidation dividend.

If a company has ended up in the red, its assets are prorated among stockholders as in any business that fails. Reports are made by all companies to their stockholders.

The gas industry does not look on this mass liquidation as another reminder of the current business recession but rather the industry takes pride in these "going out of business" outfits and will, with other industries, honor the newly liquidated businesses at special Future Unlimited banquets in hundreds of cities throughout the land.

And Future Unlimited is not a euphemism for these are Junior Achievement companies formed, organized and operated by teen-age high school students as part of a nationwide program of economic education.

There were 3,433 of these companies in operation this past year in the United States. Over 120 were counselled by firms in the gas industry.

Each Junior Achievement company has three adult advisers who guide and counsel the young enterprises. A business adviser counsels the budding business leaders in the financial, record keeping, and management phases of the enterprise. A production adviser helps the youngsters plan and produce their product or service. And a sales adviser provides guidance in the field of sales planning and marketing.

The advisers are most active when the young company is organizing itself and taking the first plunge into business. By the end of five or six meetings, the advisers step into the background so that the young officers can run the company.

The three advisers are employees of a "counselling company." There is no financial obligation to the youthful firm on the part of the counselling company although most do participate in the general support of Junior Achievement as a matter of course.

The young people are recruited through the cooperation of public, private and parochial high school authorities. The boys and girls are put into business for themselves. Companies are formed, numbering from 15 to 20 boys and girls. Each company meets one night a week during the school year in Junior Achievement business centers. These "workshops" are established and maintained by the local Junior Achievement organization which is made up of civic, education, and business leaders.

The Junior Achievement company is the basic unit. The boys and girls now in business for themselves are its board of directors, its labor force, its sales staff. Organized in September and October, when the youngsters elect a president and other officers, the young people decide on the product their company will make and sell, determine the amount of working capital their firm will need to begin production. They sell capital stock (at 50 cents a share) to parents, friends, teachers and others. No one can own more than five shares and every member of the J. A. company must own at least one. Average capitalization is about $100.

When the company has raised its capital, a bank account is opened and raw materials are purchased. The company applies for its J. A. charter, pays rent (usually $3 a month), buys the small tools it needs. Shop machinery is leased from the Junior Achievement organization by a deposit of capital proportionate to the value of the machinery used.

The company makes its products, sells them on the open competitive market. The young businessmen and women decide on the wages they will pay themselves, determine the amount of commissions on sales. Complete books are kept. Average gross sales of a J. A. company are $300.

Because Junior Achievement companies are regular businesses, they have to solve the type of problems which confront adult enterprises.

JAWWCO, a Junior Achievement company counselled by the Nashville Gas Co., early in its business life felt the twofold pressure of low productivity and the cost-price squeeze.

The company was manufacturing a wooden foot stool. Production failed to meet quotas because of unanticipated bottle necks. Competition was severe. Then the cost of raw material went up 26 per cent. The teen-age companies

Jack Vogel (l.), Laclede Gas Co., is business and accounting adviser to the Hi-Times Co., a Junior Achievement company counselled by Laclede in St. Louis

Houston junior achievers deliver share of Tasco Co. stock to E. Clyde McGraw, Transcontinental Pipeline Corp. president. Achievers make fishing tackle box

Terry Hart, Nashville, Tenn. Gas Co. sales manager, gives some selling tips on moving the products made by JAWWCO, a J.A. company sponsored by Nashville

purchasing personnel looked around for other vendors but to no avail. Raw materials were up everywhere.

The board of directors meeting the following week was a gloomy affair. Competition would not allow a price increase. The increased cost of raw materials gave only a 13 cent profit margin on a two dollar unit. Production bugs had slowed output and the company's working capital position was dangerously low. If something wasn't done one small setback could wreck the organization.

The teen-age directors gave thought to the possibility of a second product, a fast seller, which could improve their capital position and buy time to work out the production kinks in their foot stool.

Another J. A. company was having phenomenal success with a cricket cage for fishermen. With a large lake in the immediate area, the achievers sensed that if they could produce something that would appeal to the sportsman, they would "have it made." They hit on the idea of an attractively packaged "fisherman's bailing sponge"—"perfect for bailing water from boats, washing boats, or for any household use."

Makes comeback

The company formed itself into two divisions. The sponge division found it could cut, size, package and label some two hundred units in the brief two hours the company meets. Sales proved even better than expected and vital capital was pumped back into the company.

Meanwhile the foot stool division composed of the company's best production people worked the bugs out of the production line, increased productivity and lowered costs.

From the brink of disaster the company has become one of the most successful in the Nashville area.

Nashville Gas Co. is proud of the young business people of its J. A. company. Wister Ligon, president of Nashville Gas, has this to say about Junior Achievement:

"This year's sponsorship of a Junior Achievement company has impressed us anew with the tremendous potential of our youth. We know that Junior Achievement is one of the most effective ways of telling the story of capitalism that is in existence today. This is evident in our community where Junior Achievement is operating for the first year. Nashville Gas Co. is understandably proud to be active in every phase of Junior Achievement. Our firm contributes not only financially, but provides leadership on the local Junior Achievement board and plans to counsel annually with a Junior Achievement company."

This is the first year for Junior Achievement in Nashville and hence the first experience for Nashville Gas Co. in the "learn-by-doing" program.

Laclede Gas Co. in St. Louis, Mo., first became interested in Junior Achievement in 1946. The Junior Achievement company it counselled this year produced styrofoam Christmas decorations the first half of the year while a research and development committee developed an item for the second half of the year. The sense of timing products for seasonal demand and the need for research and development are part and parcel of lessons learned by teen-agers in Junior Achievement.

A. H. Burgess, vice president of Laclede Gas, gives his ideas of Junior Achievement from years of experience. Mr. Burgess says this: "We have been active in Junior Achievement for 12 years and feel that this continuity of participation is the finest practical testimonial we can give the program. We have found our association with Junior Achievement is not only beneficial to the teen-agers but has provided valuable leadership and business training to our junior executives who have served as advisers and provided us with a public and community relations program demanding our attention and support."

E. Clyde McGraw, president of Transcontinental Gas Pipe Line Corp., agrees with Mr. Burgess that Junior Achievement activity is a two-way street with real benefits to the counselling firm as well as to the teen-age participants. Mr. McGraw said, "We are pleased to note how many of our employees are working with Junior Achievement in Houston. They benefit, too, as individuals just as do our company and the young people involved. With a clarity no book can attain, Junior Achievement demonstrates the corporate pattern in our free enterprise system. This program is one of those through which, by working with these fine young people, you not only serve them but in turn benefit yourself and our way of life."

Throughout the country almost 100 firms in the gas industry who collectively counsel 120 J. A. companies have found in Junior Achievement a program which helps young people while at the same time provides direct benefits to the company.

Selected for Brussels

This Caloric built-in oven-broiler unit has been selected by the Industrial Design and Crafts Advisory Committee for exhibition in the U. S. Pavilion at the 1958 Brussels World's Fair

Gas role important

The gas industry has played an important role in this growth. Wallace M. Chamberlain, general manager for Michigan Consolidated Gas Co.'s Grand Rapids district, probably sums up the feeling of gas executives everywhere who have been active in Junior Achievement when he says, "We in Michigan Consolidated Gas Co. enthusiastically believe that Junior Achievement is one of the finest programs for young people that has been developed in this country's history. For the youth of our communities it offers an opportunity to learn about business and industry under a free enterprise system through actual experience and through contact with experienced business people who give freely of their time as advisers. It serves as a practical supplement to their classroom work in the high schools. To business and industry Junior Achievement offers a unique opportunity to invest in the future by helping to develop properly our greatest national resource—our young men and women who are today in training to become tomorrow's leaders."

Further information about Junior Achievement is available by writing or calling the local Junior Achievement office in your community or writing Junior Achievement's national headquarters, Junior Achievement, Inc., 500 Fifth Avenue, New York 36, New York.

Standards revisions

(Continued from page 14)

nish a relief valve on all low pressure hot water boilers and a safety valve on all low pressure steam boilers. In line with requests from boiler manufacturers, the Approval Requirements Committee took action making mandatory that as of June 1, 1958, all approved steam and hot water boilers produced, regardless of the date of their approval, were to be supplied with either a relief or safety valve as required when the unit is shipped from the manufacturers plant.

At the option of the manufacturer, vented room heaters may be tested and approved with a 1-inch clearance to the wall at the back or at the back and one side under the revised provisions for room heaters. When tested in this manner, the maximum temperature on the walls adjacent to the unit and at points on the walls extending above the unit and 3 feet in front of the unit is not to exceed 90° F above room temperature. Vented room heaters tested and approved under this optional requirement will be clearly labeled as to the minimum clearance permitted between the appliance and adjacent combustible construction for the guidance of the installer.

The listing requirements for domestic gas conversion burners specify a new test appliance for testing in-shot type burners. The installation standard for conversion burners has been editorially revised for clarity and will subsequently be printed in pocket size to facilitate its use.

While a number of other revisions have been made in the proposed standards, they are for the most part editorial in nature and intended to clarify the intent.

Typewritten copies of these revisions were recently distributed to interested equipment manufacturers and others for their information. Printed copies will be available near the end of the year following approval as American Standard. Copies may be obtained from the A. G. A. Laboratories.

Operating man's role

(Continued from page 17)

in observing cost trends as well as data necessary to intelligently establish the economic justification for retiring plant or continuing plant in service.

The demands of the gas business upon our administrative talents, in the light of the present economic pattern, demand the participation to a larger degree of the operating man in matters of financial import than heretofore with the result that the line of demarcation between operation and finance tends to gradually become dimmer.

It goes without saying that the financial people must and do appreciate the problems and difficulties of the operating man. However, a really successful financial program cannot be conducted unless the operating man has a fairly sizable fund of knowledge with respect to some of the financial aspects of the operations and the results of the operating transactions.

It will be principally through the assistance of the operating man that there will be attained the fundamental objectives to place the enterprise in a sound financial condition and to have the enterprise earn satisfactory profits for both the near and far future.

Meet your Association staff

Frank W. Williams

Frank W. Williams is a "salesman's salesman." He has a knack for making just the sales pitch that hits bull's-eye. It is no coincidence, then, that he holds a post involving sales, and being confronted with such questions as "What sort of residential sales training program should we set up?" or "What would be a suitable residential sales compensation plan for our company?"

Mr. Williams has been in sales work for over two decades, and has built a reputation as one who has a distaste for dallying, an affinity for work. Before joining A. G. A., he was new business representative for Brooklyn Union Gas. Shortly after his move to A. G. A. in 1938, he was named assistant secretary of the Residential Gas Section, and in 1944 was promoted to secretary. In 1956, he took on additional duties as secretary of the Gas Industry Development Committee.

In his post, he spends about half his time "on the road." He has traveled to each state in the U. S., and has made many friends along the way. He admits that "I get my biggest kick out of making informal presentations to salesmen, to tell them what we at A. G. A. are doing at the national level to make their selling easier at the local level."

Although he thoroughly enjoys traveling, he equally enjoys home life with his wife, Scottie dog, two parakeets, and canary—and spends many hours "green-thumbing it" in his garden.

Gardening is not his only weekend talent—he has many, and to compensate, a few shortcomings here and there. He is particularly skillful at bowling and fishing. About fishing, he says, "Contrary to usual procedure, my big ones never get away," but some say of him, "He brings along more anti-seasickness pills than fishing equipment."

His shortcomings aren't too blameworthy. They run something like this: generous to a fault, persistent raconteur, and a "pushover" at gin rummy. The latter, he suspects, "is one reason I'm so often in demand at industry gatherings."

A. G. A. Bureau of Statistics sees annual building costs of $3.6 billion in 12 years when the gas industry will serve 43.7 million customers

$36 billion construction by 1970

PROJECTED GAS CUSTOMERS[a] BY CLASS OF SERVICE, 1957-1970

(Thousands)

	Residential Heating and Cooling	Other Residential	Commercial	Industrial and Other	Total
1957	17,099	10,932	2,160	169	30,360
1958	18,100	10,720	2,230	170	31,220
1959	19,240	10,360	2,300	180	32,080
1960	20,430	9,970	2,370	180	32,950
1961	21,700	9,520	2,440	190	33,850
1962	22,980	9,080	2,520	190	34,770
1963	24,330	8,600	2,600	200	35,730
1964	25,670	8,190	2,680	210	36,750
1965	27,060	7,770	2,760	210	37,800
1966	28,420	7,420	2,850	220	38,910
1967	29,770	7,120	2,950	220	40,060
1968	31,100	6,870	3,040	230	41,240
1969	32,350	6,720	3,140	240	42,450
1970	33,620	6,590	3,240	250	43,700

[a] Average number during the year.

PROJECTED GAS SALES TO ULTIMATE CONSUMERS, BY CLASS OF SERVICE, 1957-1970

(Millions of therms)

	Residential Heating and Cooling	Other Residential[a]	Commercial	Industrial and Other	Total
1957	16,692	8,978	6,882	43,131	75,683
1958	17,570	9,910	7,080	45,160	79,720
1959	18,890	10,450	7,550	47,350	84,240
1960	20,280	11,000	8,040	49,600	88,920
1961	21,780	11,580	8,590	52,090	94,040
1962	23,340	12,180	9,180	54,440	99,140
1963	25,030	12,810	9,800	57,050	104,690
1964	26,760	13,470	10,470	59,800	110,500
1965	28,620	14,180	11,180	62,820	116,800
1966	30,520	14,910	11,920	65,930	123,280
1967	32,470	15,680	12,790	69,090	130,030
1968	34,450	16,480	13,730	72,650	137,310
1969	36,400	17,310	14,690	76,550	144,950
1970	38,420	18,170	15,710	80,300	152,600

[a] Includes "other residential" use of all residential customers, including those using gas for heating and/or cooling.

The gas utility and pipeline industry will spend more than $36 billion for construction between now and 1970, the Bureau of Statistics forecasts in a new growth analysis. Construction expenditures will reach an annual peak of $3.6 billion in 1970 when the industry will serve 43.7 million customers.

Daniel Parson, director of the A. G. A. Bureau of Statistics estimates that the number of gas customers will increase by nearly 45 per cent over the 30.3 million served last year. Sales of 153 billion therms in 1970 will be more than double last year's sales of 75.7 billion therms, and revenues received from ultimate customers will reach an annual total of $10.7 billion, up 162 per cent from 1957.

No major differentials in rate of growth by class of service are foreseen except that industrial sales, with a gain of 86 per cent over the 13-year period, will increase at a slightly slower pace than will residential and commercial sales.

17 million use gas

More than 17 million (62 per cent) of last year's residential customers used gas for heating. A. G. A. predicts that the industry will have 33.6 million home heating customers on its lines by 1970, nearly 85 per cent of all residential con-

PROJECTED EMPLOYEES AND PAYROLL OF THE GAS INDUSTRY, 1957-1970

	Employees (000)	Payroll (In Millions)	Pay Per Employee
1957	205.2	$1,055.8	$5,145
1958	209.0	1,130.3	5,410
1959	212.9	1,209.5	5,680
1960	216.9	1,293.6	5,965
1961	221.0	1,383.0	6,260
1962	225.2	1,480.2	6,575
1963	229.6	1,584.0	6,900
1964	234.2	1,696.8	7,245
1965	239.0	1,819.5	7,615
1966	244.1	1,947.9	7,980
1967	249.4	2,089.7	8,380
1968	254.8	2,242.0	8,800
1969	260.3	2,405.2	9,240
1970	266.0	2,580.7	9,700

PROJECTED REVENUES FROM GAS SALES TO ULTIMATE CONSUMERS, BY CLASS OF SERVICE, 1957-1970

(Millions)

	Residential	Commercial	Industrial and Other	Total
1957	$2,368.5	$ 496.6	$1,223.4	$ 4,088.5
1958	2,585.6	522.9	1,323.1	4,431.6
1959	2,785.7	566.7	1,434.8	4,787.2
1960	2,997.0	612.4	1,552.4	5,161.8
1961	3,225.4	664.5	1,682.4	5,572.3
1962	3,463.9	721.0	1,818.3	6,003.2
1963	3,720.7	780.1	1,968.2	6,469.0
1964	3,987.1	845.2	2,128.8	6,961.1
1965	4,273.1	915.0	2,311.7	7,499.8
1966	4,570.6	993.7	2,505.4	8,069.7
1967	4,877.8	1,081.1	2,715.3	8,674.2
1968	5,194.5	1,174.6	2,949.7	9,318.8
1969	5,514.3	1,272.9	3,207.3	9,994.5
1970	5,847.7	1,380.6	3,476.4	10,704.7

PROJECTED GAS INDUSTRY GROSS PLANT, AND CONSTRUCTION EXPENDITURES BY FUNCTION, 1957-1970

(Millions)

		Construction Expenditures					
	Gross[a] Plant	Total	Production & Local Storage	Transmission	Underground Storage	Distribution	General
1957	$16,739	$2,010	$380	$ 910	$ 54	$ 560	$106
1958	18,518	2,196	378	990	67	673	88
1959	20,557	2,265	407	973	82	698	105
1960	22,659	2,335	480	973	68	724	90
1961	24,791	2,369	497	984	71	722	95
1962	27,007	2,462	531	991	74	768	98
1963	29,334	2,586	575	1,017	78	813	103
1964	31,799	2,739	622	1,029	82	896	110
1965	34,373	2,860	678	1,088	86	894	114
1966	37,096	3,026	740	1,108	91	966	121
1967	39,948	3,169	795	1,123	95	1,029	127
1968	42,920	3,302	858	1,173	99	1,040	132
1969	46,017	3,441	912	1,203	103	1,085	138
1970	49,254	3,597	983	1,206	108	1,156	144

[a] As of December 31.

PROJECTED MILES OF MAIN, GAS INDUSTRY, 1957-1970

(Thousands)

	Field and Gathering[a]	Transmission	Distribution	Total
1957	49.7	157.3	336.2	543.2
1958	51.5	162.5	347.3	561.3
1959	53.6	168.8	358.5	580.9
1960	55.9	175.3	370.1	601.3
1961	58.3	182.3	381.9	622.5
1962	60.7	189.3	394.0	644.0
1963	63.3	196.9	407.0	667.2
1964	66.0	204.7	421.0	691.7
1965	68.9	213.2	435.0	717.1
1966	71.9	221.9	449.6	743.4
1967	75.0	230.8	464.8	770.6
1968	78.3	240.4	480.4	799.1
1969	81.7	250.4	496.3	828.4
1970	85.2	260.4	512.7	858.3

[a] Excludes field and gathering facilities of producers. Reflects only field and gathering mains of pipelines and distribution companies.

sumers and twice as many as last year. A substantial portion of these customers also will use gas for summer cooling.

The Bureau of Statistics estimates that the gas industry's gross plant will be $49.3 billion by the end of 1970. This will be a gain of 194 per cent over the estimated $16.7 billion worth of facilities in use at the end of last year.

The industry will be operating 858,000 miles of mains by 1970, compared with an estimated 543,000 miles in use at the end of last year. Transmission line mileage will rise from 157,000 last year to a total of 260,000. Distribution lines will increase from 336,000 to 513,000 miles during the same period.

Increases necessary

While transmission construction expenditures will grow at a modest rate during the next 13 years, more substantial increases will be necessary for new construction and the expansion of production facilities, distribution systems, and both local and underground storage facilities.

Projecting the industry's manpower requirements, A. G. A. forecasts that employment will reach 266,000 by 1970, with a payroll of $2.6 billion that year. Approximately 205,000 employees shared payrolls totaling $1.1 billion during 1957.

Making PAR Possible

These companies are PARtners in '58. They are taking advantage of an action-tested team approach—an approach that helps the industry to maintain its leadership, while it helps the PAR subscriber to meet national promotion, advertising, research, and public information needs. PAR undertakes those jobs that can be done only or done best at the national level. Multiply your sales-power by joining PAR today!

PAR NEW ENGLAND REGION

Concord Natural Gas Corp., Concord, N. H.

Central Massachusetts Gas Co., Webster, Mass.

Lawrence Gas Co., Lawrence, Mass.

Lynn Gas & Electric Co., Lynn, Mass.

Mystic Valley Gas Co., Malden, Mass.

Northampton Gas Light Co., Northampton, Mass.

North Shore Gas Co., Salem, Mass.

Norwood Gas Co., Norwood, Mass.

Wachusett Gas Co., Leominster, Mass.

Boston Gas Co., Boston, Mass.

Fall River Gas Co., Fall River, Mass.

The Connecticut Power Co., Hartford, Conn.

New Bedford Gas and Edison Light Co., Cambridge, Mass.

Cambridge Gas Co., Cambridge, Mass.

Worcester Gas Light Co., Worcester, Mass.

New Britain Gas Light Co., New Britain, Conn.

Haverhill Gas Co., Haverhill, Mass.

The Greenwich Gas Co., Greenwich, Conn.

Brockton Taunton Gas Co., Brockton, Mass.

Fitchburg Gas & Electric Light Co., Fitchburg, Mass.

Rockland Light & Power Co., Nyack, N. Y.

Springfield Gas Light Co., Springfield, Mass.

The Housatonic Public Service Co., Derby, Conn.

Manchester Gas Co., Manchester, N. H.

Algonquin Gas Transmission Co., Boston, Mass.

The Connecticut Light & Power Co., Hartford, Conn.

The Hartford Gas Co., Hartford, Conn.

Blackstone Valley Gas & Electric Co., Pawtucket, R. I.

Lowell Gas Co., Lowell, Mass.

The Bridgeport Gas Co., Bridgeport, Conn.

New Haven Gas Co., New Haven, Conn.

Ware Gas Co., Ware, Mass.

PAR MID EASTERN REGION

Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

The Brooklyn Union Gas Co., Brooklyn, N. Y.

Elizabethtown Consolidated Gas Co., Elizabeth, N. J.

Consolidated Natural Gas System
- The East Ohio Gas Co.
- Hope Natural Gas Co.
- New York State Natural Gas Corp.
- The Peoples Natural Gas Co.
- The River Gas Co.

City Gas Co. of New Jersey, Flemington, N. J.

City Gas Co. of Phillipsburg, Phillipsburg, N. J.

Syracuse Suburban Gas Co., East Syracuse, N. Y.

North Penn Gas Co., Port Allegany, Pa.

Baltimore Gas & Electric Co., Baltimore, Md.

New Jersey Natural Gas Co., Asbury Park, N. J.

Delaware Power & Light Co., Wilmington, Del.

The Columbia Gas System, Inc.
- Amere Gas Utilities
- Columbia Gas of Kentucky, Inc.
- Columbia Gas of New York, Inc.
- Cumberland and Alleghany Gas Co.
- The Manufacturers Light & Heat Co.
- The Ohio Fuel Gas Co.
- United Fuel Gas Co.
- Virginia Gas Distribution Corp.

Philadelphia Electric Co., Philadelphia, Pa.

Keokuk Gas Service Co., Philadelphia, Pa.

Rochester Gas & Electric Corp., Rochester, N. Y.

Long Island Lighting Co., Mineola, N. Y.

The United Gas Improvement Co., Philadelphia, Pa.

Public Service Electric & Gas Co., Newark, N. J.

Equitable Gas Co., Pittsburgh, Pa.

Hagerstown Gas Co., Hagerstown, Md.

Washington Gas Light Co., Washington, D. C.

Consolidated Edison Co. of New York, N. Y.

International Nickel Co., New York, N. Y.

PAR SOUTHEASTERN REGION

Gas Light Co. of Columbus, Columbus, Ga.

Nashville Gas Co., Nashville, Tenn.

Western Kentucky Gas Co., Owensboro, Ky.

Suffolk Gas Co., Suffolk, Va.

Piedmont Natural Gas Co., Inc., Charlotte, N. C.

Mid-Georgia Natural Gas Co., Sarasota, Fla.

South Atlantic Gas Co., Savannah, Ga.

Texas Gas Transmission Corp., Owensboro, Ky.

Florida Home Gas Co., DeLand, Fla.
Knoxville Utilities Board, Knoxville, Tenn.

PART SOUTHWESTERN REGION

Lone Star Gas Co., Dallas, Tex.
Arkansas Western Gas Co., Fayetteville, Ark.
Sabine Gas Co., Inc., Many, La.
Zenith Gas System, Inc., Alva, Okla.
State Fuel Supply Co., Oklahoma City, Okla.
Arkansas Louisiana Gas Co., Shreveport, La.
United Gas Corp., Shreveport, La.
United Gas Pipe Line Co., Shreveport, La.
Transcontinental Gas Pipe Line Corp., Houston, Tex.
Louisiana Power & Light Co., New Orleans, La.
Hobbs Gas Company, Hobbs, N. M.
New Orleans Public Service, Inc., New Orleans, La.
Oklahoma Natural Gas Co., Tulsa, Okla.
El Paso Natural Gas Co., El Paso, Tex.
Texas Eastern Transmission Corp., Shreveport, La.
Phillips Petroleum Co., Bartlesville, Okla.
Pioneer Natural Gas Co., Amarillo, Tex.
Houston Natural Gas Corp., Houston, Tex.
Southern Union Gas Co., Dallas, Tex.

PART GREAT LAKES REGION

Northern Illinois Gas Co., Aurora, Ill.
Cincinnati Gas & Electric Co., Cincinnati, Ohio
Central Illinois Public Service Co., Springfield, Ill.
Southern Indiana Gas & Electric Co., Evansville, Ind.
Madison Gas & Electric Co., Madison, Wis.
Hoosier Gas Corp., Vincennes, Ind.
Northern Indiana Public Service Co., Hammond, Ind.
Pendleton Natural Gas Co., Pendleton, Ind.
Battle Creek Gas Co., Battle Creek, Mich.
Citizens Gas Fuel Co., Adrian, Mich.
The Dayton Power & Light Co., Dayton, Ohio
Southeastern Michigan Gas Co., Port Huron, Mich.
The Peoples Gas Light & Coke Co., Chicago, Ill.
North Shore Gas Co., Waukegan, Ill.
Winnebago Natural Gas Corp., Kaukauna, Wis.
Allied Gas Co., Paxton, Ill.
Consumers Power Co., Jackson, Mich.
Michigan Consolidated Gas Co., Detroit, Mich.
Milwaukee Gas Light Co., Milwaukee, Wis.
Richmond Gas Corp., Richmond, Ind.
Wisconsin Public Service Corp., Milwaukee, Wis.
Indiana Gas & Water Co., Indianapolis, Ind.
Citizens Gas & Coke Utility, Indianapolis, Ind.
West Ohio Gas Co., Lima, Ohio
Kokomo Gas & Fuel Co., Kokomo, Ind.
Central Illinois Light Co., Peoria, Ill.
Natural Gas Service, Inc., Madison, Ind.
The Ohio Gas Co., Bryan, Ohio
Central Indiana Gas Co., Muncie, Ind.

PART MID-WEST REGION

Pueblo Gas & Fuel Co., Pueblo, Colo.
Public Service Co. of Colorado, Denver, Colo.
Kansas-Nebraska Natural Gas Co., Inc., Hastings, Neb.
Montana-Dakota Utilities Co., Minneapolis, Minn.
Greeley Gas Co., Denver, Colo.
Citizens Gas Co. of Hannibal, Hannibal, Mo.
Iowa-Illinois Gas & Electric Co., Davenport, Iowa
Cheyenne Light Fuel & Power Co., Cheyenne, Wyo.
Bowling Green Gas Co., Bowling Green, Mo.
Laclede Gas Co., St. Louis, Mo.
Minnesota Valley Natural Gas Co., Minneapolis, Minn.
Metropolitan Utilities District, Omaha, Neb.
Tri-Cities Gas Corp., Coffeyville, Kan.
Northern States Power Co., Minneapolis, Minn.

PART WESTERN REGION

Washington Natural Gas Co., Seattle, Wash.
San Diego Gas & Electric Co., San Diego, California
Portland Gas & Coke Co., Portland, Ore.
Mountain Fuel Supply Co., Salt Lake City, Utah
Southern California Gas Co., Los Angeles, Calif.
Southern Counties Gas Co. of California, Los Angeles, Calif.

PART CANADA

British Columbia Electric Co., Vancouver, B. C.
Union Gas Co. of Canada, Chatham, Ont.
The Valley Gas Co., Ltd., Turner Valley, Alta.
Canadian Western Natural Gas Co., Calgary, Alta.
Northwestern Utilities, Ltd., Edmonton, Alta.

PART PIPELINE COMPANIES

New York State Natural Gas Corp., Pittsburgh, Pa.
Atlantic Seaboard Corp., Charleston, W. Va.
Home Gas Co., Pittsburgh, Pa.
Kentucky Gas Transmission Corp., Charleston, W. Va.
United Gas Pipe Line Co., Shreveport, La.
Natural Gas Pipeline Co. of America, Chicago, Ill.
Texas Illinois Natural Gas Pipe Line Co., Chicago, Ill.
Transcontinental Gas Pipe Line Corp., Houston, Tex.
Algonquin Gas Transmission Co., Boston, Mass.
Michigan Wisconsin Pipeline Co., Detroit, Mich.
American Louisiana Pipeline Co., Detroit, Mich.
El Paso Natural Gas Co., El Paso, Tex.
Texas Eastern Transmission Corp., Shreveport, La.
Southern Natural Gas Co., Birmingham, Ala.
Texas Gas Transmission Corp., Owensboro, Ky.
Pacific Lighting Gas Supply Co., Los Angeles, Calif.
Colorado Wyoming Gas Co., Denver, Colo.

800 attend National Conference of Electric and Gas Utility Accountants in Houston April 14, 15, and 16

'Fair rate of return' not fair

Customer Relations (front l. to r.): C. L. Digiovanni, R. C. Becker, E. A. Menke. (Standing l. to r.): H. R. Potts, EEI chairman; G. D. Buzard, N. F. Schaberg, A. G. A. chairman; and R. D. Davis

General Accounting (seated l. to r.): C. E. Brockway, W. F. Near, J. H. Bartley, H. M. Ruth Jr. (Standing l. to r.): H. H. Bollinger, C. H. DeWitt, O. Ullery, A. G. A. chairman; G. F. Jones, D. C. Gilespie

The traditional "fair rate of return" on utility investment is fair no longer, more than 800 gas and electric utility accountants were told in Houston, Texas, last month.

This was told in the keynote address at the National Conference of Electric and Gas Utility Accountants, April 14-16.

The keynote speaker, Basil B. Elmer, assistant vice-president, The First Boston Corporation, said the rate of return must be increased if utilities are to raise the billions required to finance needed expansion in the next few years. Mr. Elmer vigorously urged utility companies to beard the regulating commissions with demands for a justified increase in the "fair return" from the presently accepted 6 per cent to at least 7 or 7¼ per cent.

The increased rate is necessitated, Mr. Elmer said, by changed conditions in the money market. The safety and dependable income of utility stocks, long their principal virtues, no longer have the same attraction for investors. Appreciation in market value, to offset inflationary trends, now is the most desired characteristic of stocks. For utility stocks to compete with industrials for investment funds, the rate of return must be high enough to provide for "significant re-investment" out of earnings. An increase in return to 7 or 7¼ per cent would mean increase in cost to consumers of only 1 per cent or less, Mr. Elmer stated.

Also speaking at the opening session was John H. Wimberley, president, Houston Natural Gas Co., who described the part played by natural gas in the industrial development of the Texas Gulf Coast area. Petrochemicals, one of the surprise industries of the post-World War II period, is responsible for much of this recent growth. Mr. Wimberley told of an 814-mile pipeline now devoted entirely to transmission of petrochemical products in Texas. Texas now has 85 per cent of the nation's petrochemical capacity, producing approximately 20 per cent of the nation's entire chemicals output. Petrochemicals got its start as an industry during World War II as a supplier of materials for synthetic rubber and explosives. It was expected to decline with the end of defense orders, but instead boomed as hundreds of civilian applications were found for the petroleum and natural

stomer Accounting (seated l. to r.): C. D. Otcasek, Don Simpson, R. G. Mass, bert Haake. (Standing l. to r.): H. C. Garvens, A. G. A. chairman; T. C. Eickyer, J. L. Walker, E. J. Vetog, G. L. Barnes, and M. F. Young, EEI chairman

Depreciation Accounting (l. to r.): George T. Logan, Malcolm S. Lonon, Henry R. Whiton, L. W. Robinson, George D. Porter, and Otis E. Smith. Mr. Porter is chairman of the A. G. A. group while Mr. Smith heads up the EEI committee

ectronic Accounting Machine Developments (l. to r.): Russell W. Britt, E. De- re Cowles, Dr. Howard H. Aiken, Emmet T. White, R. E. Anderson, and Walter Ott. Mr. Britt is EEI chairman; Mr. White is head of the A. G. A. group

First General Session (seated l. to r.): C. S. Stackpole, Edwin Vennard, J. D. Elliott, Donald W. Peterson, A. G. A. Accounting Section chairman; (standing l. to r.): B. B. Elmer, Rev. R. C. Schmuck, W. A. Parish, J. C. Flannagan

neral Activities panel (l. to r.): Lester F. Reynolds, moderator; C. E. Pullum, P. Allman, J. B. Madigan, E. M. Holwick, and J. W. Prenger. Panel mbers discussed industrial practices in computing liberalized depreciation

Plant Accounting and Property Records (l. to r.): L. W. Burns, EEI vice-chairman; M. C. Zumke, George A. Brownmiller, EEI chairman; Charles A. Gracy, A. G. A. chairman; Harold R. Porter, Frank T. Noonan, and W. Arthur Sprague

General Activities (seated l. to r.): J. E. Theobald, John E. Carlson, Raymond E. Harbaugh, Kenneth P. Locke. (Standing l. to r.): Conrad F. Mills, Allen O. Hinkle, Alex R. St. Bernard, P. R. Lawson

Customer Activities (l. to r.): C. J. Berner, W. M. Dolan, J. P. Bromley, C. R. Goode Jr., T. J. Peterson, A. B. Wilson, T. C. Eickmeyer, H. J. Yonkers, C. T. Shoch, F. U. Naylor, L. J. Rauh (not shown)

gas by-products.

Delegates were greeted by Chester S. Stackpole, managing director, A. G. A., and by Edwin Vennard, vice-president and managing director, E.E.I. Mr. Stackpole expressed gratification at the areas of "mutuality of interest" such as accounting, in which competing industries could pool efforts and ideas for common benefit. Mr. Vennard forecast a continuing expansion in gas and electric use, even after all potential customers have been served. Individual use would keep growing, he said, because of new appliances and more intensive use of appliances. Air conditioning is one example of a new application which is profoundly affecting usage forecasts. Historically, usage of utility services has doubled every nine years. In order to keep up with this growth trend, present investment of $29 billion will grow to some $86 billion in the next ten years.

Welcoming the accountants to Houston were John C. Flanagan, vice-president and general manager, Texas Operations, United Gas Corporation, and W. A. Parish, president, Houston Lighting and Power Company. Presiding over the conference were Donald W. Peterson, chairman, A. G. A. Accounting Section, and J. Douglas Elliott, chairman, E.E.I. Accounting Division.

Following the opening general session, the delegates convened for the remainder of the three-day conference in special sessions to hear presentation of papers, panel discussions and round-table conferences on topics in individual areas of interest.

Between sessions, delegates visited an exhibit of office machines, featuring new electronic computing and data processing machines.

Subjects covered by the separate committee sessions were Accounting Employee Relations, Customer Accounting, Customer Collections, Customer Relations, Customer Activities, Depreciation Accounting, Electronic Accounting Machine Developments, General Activities, General Accounting, Internal Auditing, Plant Accounting and Property Records, and Taxation Accounting.

Papers and transcripts of talks are available from the A. G. A. Accounting Section secretary.

New NBS reference gas results from A.G.A. research program

THE GAS UTILITY industry has been provided with an improved testing procedure and a reference gas of certified heating value as the result of a research and development project conducted by the American Gas Association Research Bureau.

A. G. A. reports that the gas, developed in cooperation with the government, now is available from the National Bureau of Standards. This gas has a heating value close to that of natural gas, approximately 1000 Btu per cubic foot to an accuracy of plus or minus 0.5 Btu.

The government bureau recently began supplying the reference gas to industry in standard "E" cylinders containing approximately 250 standard cubic feet at an initial pressure of about 1900 psi. This amount is sufficient for approximately 200 recording gas calorimeter calibrations.

The new Bureau of Standards service is the direct outgrowth of a program started several years ago by A. G. A. to develop a reference gas, certification procedure, and calorimetric testing methods which would be acceptable to utility companies marketing natural gas as a fuel.

Recent increased use of gas for fuel purposes, plus greater consideration of heating values in marketing gas, focused industry attention on the need for a standard gas which could be used in calibrating calorimeters. When the study was initiated, A. G. A. also recognized that Bureau of Standards certification of gas heating values would be particularly desirable in matters involving federal, state and local regulatory bodies.

The Bureau of Standards participated throughout the development program and directed technical research activities. Assistance was also given by the Washington (D. C.) Gas Light Co., which contributed natural gas, personnel and facilities for filling and storing reference gas cylinders.

The service now offered by the federal bureau is essentially the same as that administered by A. G. A. in the early stages of the development program. Extensive field tests of the reference gas substantiated laboratory findings, and the demand for the new service already has confirmed the practicability of the operation.

Charges for gas, tank rental, and services have been fixed so that the Bureau of Standards program is self-supporting. Current cost to gas industry customers is $75 per tank plus shipping charges. Request forms and additional information are available from the Chemistry Division, National Bureau of Standards, Washington 25, D. C.

Topics at fourth conference range from manpower problems to effects of nuclear, solar energy

Management studies future needs

The fourth annual General Management Section Conference in Washington's Shoreham Hotel March 31-April 2 was attended by 298 gas industry leaders, a record number for this meeting. The previous high was in 1956 when 261 attended.

Topics ranged from a look into the future manpower needs of the gas industry to what effect nuclear and solar energy is expected to have on the industry.

William Parker, vice-president in charge of administration for Ketchum, MacLeod & Grove, Inc., Pittsburgh, Pa., and Dr. Martin A. Elliott, director, Institute of Gas Technology, Chicago, were the principal speakers at the first session. The conference was opened by Section Chairman J. H. Wimberly, president, Houston Natural Gas Corp., who introduced the Hon. Robert E. McLaughlin, president, the District of Columbia Board of Commissioners. Mr. McLaughlin welcomed the delegates to the nation's capital.

Mr. Parker spoke on "Market Research: A Guide to Management Decision." He discussed the application of marketing research techniques to gas utility management and illustrated his talk with case histories. Mr. Parker said that surveys provide the opportunity to gather information from the people who influence marketing success, but they are of value only if they result in decision and action. He said that continuous research effort is necessary to get maximum benefit from marketing surveys.

Dr. Elliott (excerpts of his talk appeared in the April A. G. A. MONTHLY)

At the opening session are (l. to r.): E. J. Boothby, Hon. R. E. McLaughlin, J. H. Wimberly and Marvin Chandler. Mr. McLaughlin welcomed the group to nation's capital

Speaking before the Personnel Committee opening day are (l. to r.): J. J. Famularo, E. F. Hubbard, A. R. Laney, and D. S. Raabe. Committees held afternoon meetings

Featured speakers at the opening General Session are Dr. Martin Elliott (l.) and William Parker

A capacity audience heard L. S. Reis (l.) and Dr. Eli Ginzberg speak at Wednesday General Session

Marvin Chandler presided at Tuesday's General Session. Featured speakers the second day are W. Evert Welch (l.) and Dr. J. P. Wernette (r.)

David Kerr (2nd from l.) and J. N. Mosel (r.) spoke at two Tuesday luncheons. Introducing them are H. M. Henry (l.) and E. F. Hubbard

Panelists discussing "Pipe: Control of Our Key Item" are (l. to r.) C. O. Ellis, H. M. Pendley, J. A. Lauderdale, V. C. Parkes, H. E. West

said that the coming of nuclear and solar energy will be a boon to the gas industry, and that the future of the industry is closely linked with the over-all energy problem. Dr. Elliott said nuclear energy promises to play an important role in providing heat. He also said that attention should be given to problems relating to the storing of the sun's energy.

C. S. Stackpole, A. G. A. managing director, spoke at Monday's luncheon, on "The Gas Industry, Today and Tomorrow." Mr. Stackpole reviewed current statistics on the size of the industry today—it's the nation's fifth largest industry based on plant investment of about $17 billion.

Referring to our present plentiful supply of gas and how to utilize it in the future, Mr. Stackpole said the beautiful new gas appliances that can be obtained "are wonderful!" He said that in the future, every one of the 38 million women cooking with gas deserves and should have a modern new gas range. He saw a future market that is endless in sales potential.

Marvin Chandler, president, Northern Illinois Gas Co., and Section vice-chairman, presided at the Tuesday and Wednesday General Sessions. Tuesday morning speakers were W. Evert Welch, corporate consultant—inventory management, Minneapolis-Honeywell Regulator Co., and J. Philip Wernette, professor of business administration, University of Michigan.

Mr. Welch spoke on "Gaining Management Support for Inventory Control." He said that management should be interested in inventory control be-

cause the only way to get more for the company dollar is by improving your system. He said that one can't generalize on the amount that can be saved, but that if the present inventory system is oversimplified, improvements are usually easy and lucrative. The more refined the present inventory controls, the less to be gained by change, he said.

Professor Wernette's topic was "What's Ahead for American Business?" He described the present business decline as "one of the most prosperous recessions this nation has ever enjoyed," and said that a "super-boom" is not too far off. He blamed the current decline on a lack of consumer demand from a cautious public, and predicted that an upturn is near. He said the greatest boom this nation has ever experienced will begin in 1960. "This boom, the result of the high birth rate since 1942, will create a product demand, the likes of which we have never known before," Prof. Wernette said.

Three Tuesday luncheons were held, giving delegates a choice of talks. Speakers were James M. Mosel, department of psychology, George Washington University; David Kerr, Southern Union Gas Co.; and S. Lloyd Nemeyer, president, Milwaukee Gas Light Co.

Mr. Mosel's topic was "Testing and Training for Accident Prevention." This luncheon was sponsored by the Accident Prevention, Insurance, and Personnel Committees.

Speaking on the "Economic Implications of Gas Air Conditioning," Mr. Kerr gave the report on behalf of a task group which was set up by the A. G. A. Committees on Economics and Rates. The task group was organized after it became apparent that there was a conspicuous void of real economic data (the net income type of information) concerning the potential impact of gas air conditioning in many gas service areas.

Copies of this report including all slide presentations will be available at A. G. A. Headquarters.

At the luncheon sponsored by the Purchasing and Stores Committee, Mr. Nemeyer spoke on "Measuring Purchasing Performance." Mr. Nemeyer said that his topic deals directly with the problem of measuring the efficiency of the procurement function. He reviewed the problem from the views of the "insider," the "outsider," and the consultant.

Mr. Nemeyer said that no real measurement of the efficiency of the purchasing function can be made by the "outsider" alone—it must be accompanied by an evaluation of management in its broader concept and vital integration with the total company functions.

Wednesday General Session speakers were L. S. Reis, president of Reis and Chandler, Inc., and Dr. Eli Ginzberg, director, conservation of human resources, Columbia University. Dr. Ginzberg spoke on "The Changing Gas Industry: Manpower Implications." Mr. Reis' topic was "Managing the Gas Utility's Finances."

Mr. Reis said that investors in the gas industry can be placed in three

(Continued on page 36)

At Purchase and Stores luncheon speakers table are (l. to r.): S. P. Osborn, W. E. Welch, Vaughan O'Brien, A. H. Cannon, S. L. Nemeyer, and W. L. Brown

Members of the gas air conditioning panel discussion were (l. to r.) W. Loving, David Kerr, Hall Henry, W. J. Crowley, Ross Cahal, C. B. Gamble

At luncheon (l. to r.): V. O'Brien, H. S. Walker, M. Chandler, C. S. Stackpole, J. H. Wimberly, J. H. Carson, R. H. Brandow, W. H. Loving, E. C. Baumann

Wednesday luncheon (l. to r.): V. O'Brien, H. S. Walker, E. J. Boothby, R ard Harkness, J. H. Wimberly, E. F. Hubbard, R. W. Fouse, and A. H. Can

ROY E. WRIGHT, *CHAIRMAN* · F. T. BROOKS, *VICE-CHAIRMAN*

Together at Sales Conference on Industrial and Commercial Gas are (l. to r.): G. C. Lewis, chairman, Midwest Industrial Gas Council; S. L. Nemeyer, president, Milwaukee Gas Light; Roy E. Wright, chairman, A. G. A. Industrial and Commercial Gas Section

Seated with guest luncheon speaker Charles Blossfield (l.), ass[t]ant ticket director of Milwaukee Braves, are C. S. Stackpole, A. G. A. and Bruce A. McCandless (r.), Milwaukee Gas vice-presi[dent]

Among the speakers on Tuesday—Industrial Gas Day—were (l. to r.) Don C. Campion of Campion Fuel Engineering Co.; Robert C. Lemley, Selas Corp. of America; George L. Macdonald of The Aerotec Corp.

Importance of gas load is stressed

The Sales Conference on Industrial and Commercial Gas was held in Milwaukee's Hotel Schroeder, April 8-10, when 228 gas men heard important papers on many phases of the industry.

Greetings were extended at the General Session Wednesday by S. Lloyd Nemeyer, president, Milwaukee Gas Light Co., who stressed the importance of the industrial and commercial gas loads. Grover C. Lewis, Northern Illinois Gas Co., and chairman, Mid-West Industrial Gas Council, asked for wider publicity on outstanding industrial jobs that the delegates had in their respective territories. He told how they could cooperate with the A. G. A. Public Information Bureau to get the widest distribution for case history articles.

Following custom of the General Session, awards were presented. Harold Massey, GAMA managing director, gave plaques to the winning companies in the 1957 GAMA PEP Sales Campaign. Winners were:

Class I—over 100,000 meters, Oklahoma Natural Gas Co., Tulsa, Okla.

Class II—25,000 to 100,000 meters, Piedmont Natural Gas Co., Charlotte, N. C.

Class III—under 25,000 meters, Chattanooga Gas Co., Chattanooga, Tenn.

J. Robert Delaney, past Section chairman, the Cincinnati Gas and Electric Co., presented certificates for life membership in the Industrial and Commercial Hall of Flame to:

H. H. Gieselmann, manager, industrial division, Laclede Gas Co., St. Louis, Mo.

Chester L. Gillum, supervisor, commercial and industrial sales, Dayton Power & Light Co., Dayton, Ohio.

Edwin S. Mack, consultant, Signal Mountain, Tenn.

Edward J. Mayland, president, Gas

. R. Delaney (l.), past Section chairman, is shown presenting certificate of life membership in Hall of Flame to Chester L. Gillum, Dayton Power & Light. Eight other men also received certificates

Representing winning companies in GAMA's PEP contest are (l. to r.): J. C. Rasmussen, Chattanooga Gas; Edwin Kahler, Piedmont Natural; O. M. Heartsill Jr., Oklahoma Natural. GAMA's Harold Massey (far right) presented plaques

T. E. Hempel (l.), assistant chief research engineer, A. G. A. Laboratories, and C. T. Dierker, industrial and commercial sales supervisor, Southern California, presented papers at general session

Commercial Gas Day speakers included (l. to r.): O. E. Bangs, Stephens-Bangs Associates; John Ruffley, National Restaurant Association; R. T. Keating, Frying Equipment; R. N. Spear, Ruud; F. T. Brooks, Section vice-president

Magazines, Inc., Madison, Wis.

Robert A. Modlin, industrial sales manager, The East Ohio Gas Co., Cleveland, Ohio.

William S. Sims, manager, industrial sales division, Philadelphia Electric Co., Philadelphia, Pa.

C. S. Stackpole, managing director, American Gas Association, New York.

Douglas A. Watkins, general gas sales supervisor, Consumers Power Co., Jackson, Mich.

Paul P. Logan (in absentia), director of research, retired, National Restaurant Association, Orlando, Fla.

The Wednesday luncheon speaker was Charles Blossfield, assistant ticket director of the Milwaukee Braves. Mr. Blossfield amused the audience with stories of his baseball experiences beginning years ago in Hartford, Conn., with a minor league team and continuing through to his present major league connection.

General Session papers interested industrial and commercial gas men as well as sales executives. Subjects included organization of an industrial and commercial sales department, a specialized sales department for air conditioning, a report on A. G. A. research projects, and advice on how to spend the advertising dollar.

Two papers were given by representatives of Milwaukee's department of smoke regulation on industrial and commercial incinerators and the contribution the gas industry can make towards air pollution control. Most papers can be secured by ordering from the check list which will appear in the next *Section News Letter*.

Tuesday and Thursday were devoted to sessions dealing with specific segments of the gas industry. Tuesday was Industrial Gas Day. Talks covered large boiler conversions, area development, indirect fired high temperature furnaces, curing cement block, a discussion on infra-red panel heating, and latest news on developments in industrial gas.

Commercial Gas Day was Thursday when discussions covered reports on the PAR program as it affected commercial gas, incineration, deep fat frying temperatures, the future commercial kitchen, large volume water heating, and what the restaurant industry wants from the gas industry.

On the days preceding and following the conference, various Section committees met to institute projects for the balance of the year and/or continuing projects which would carry over another year. The industrial committees have planned a number of important information letters which will materially add to the volume of information available to the industry.

Residential building in recent years totals nearly $16 billion annually—one-fourth of new private investments

NAHB restates housing outlook

By CHARLES F. HARING JR.
Regional Vice-President
National Association of
Home Builders

The National Association of Home Builders takes note that housing has once again become a much talked about domestic issue. Because of the number of statements on housing currently being issued by both private and public sources, the organized home building industry desires to restate its own position on the home building outlook for 1958.

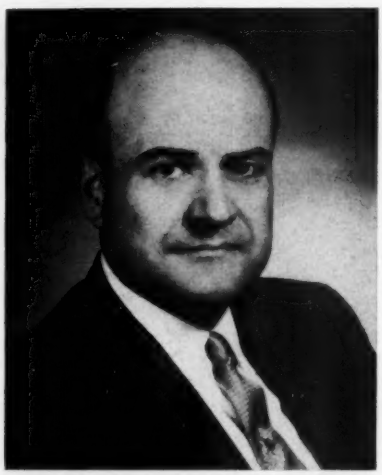
The matter of how many houses are built may not seem important to some men in other industries. But probably no other industry, except food distribution, affects so many other lines of business.

The 12 million dwelling units provided since the end of World War II, an output in construction dollars of more than $100 billion, did much to spark and sustain the post-war economic boom. By its very nature, operating practically everywhere our people live, it affects the economic life of every community.

If and when there's a spurt in home building, business from every section of the United States will be stimulated. It is not too much to say that without a healthy home building economy, geared to our people's requirements, we cannot long have a healthy over-all national economy.

The value of new residential construction built in recent years has run close to $16 billion annually, accounting for one-fourth of new private investments. Taking into account land and other non-construction factors, the value of the industry's product is probably in the neighborhood of $20 billion annually.

In recent years it has provided directly about two-and-a-half million jobs a year, with half the total involved in work on the construction site. The impact of new housing is further extended by the market it provides for a multitude of products. About 3,000 different items go into every new home; thus, any change in home construction volume is felt in thousands of factories and by thousands of suppliers all over the country, to say nothing of the thousands of builders and millions of workers employed in the industry. Residential construction uses one-third of our total lumber output, two-thirds of all brick, four-fifths of all gypsum.



Mr. Haring says that building will provide a market for many products

Surveys indicate that the sale of a new home generates in the first year of occupancy alone about $1,500 per home in retail sales of furnishings and equipment. Homebuilding also creates additional demand for other types of construction—stores, churches, schools, utility expansions and the like. Moreover, construction of new housing is a prerequisite to industrial expansion in many areas. Thus, apart from any sociological importance, home building is a vital dollars and cents influence now and in the future in every part of our country, geographically and economically.

So much for the background music. Now for the big reason for the slump in one and two-family construction in 1957. Money—so-called tight money—was the number one deterrent. Not that there existed a shortage. The money was available but at prices too high for the home-building market. Money, like any other commodity, is subject to the laws of supply and demand.

What lies ahead is a question to which you will get many and varied answers. Here's how it looks to me.

Income remains high. Family formations continue high. There's still a demand for new homes. But we will not convince people of these facts unless we throttle the pessimistic crepe hangers, who preach that we are headed for a real depression—those who await lower prices, which never come.

The picture through my window looks as follows:

1. Credits have loosened. (Federal Reserve Bank has reduced deposit requirements of member banks.)

2. The Federal Reserve rediscount rate has been cut.

3. Savings bank deposits keep increasing.

(Excerpts from an address given March 28 before the annual meeting of the Metropolitan Gas Heating and Air Conditioning Council.)

4. Government spending is being accelerated.

5. F.H.A. has speeded up processing.

6. Probable extension of the V.A. program. Congress has authorized ¼ per cent increase in G.I. interest rate.

7. Fannie May (Federal National Mortgage Association) sales are strong. The prepayment record of F.H.A.-V.A. mortgages proves them to be good investments.

8. Continued population growth. Approximately 173,000,000 up from 150,000,000 in 1950.

9. The Housing Bill, so-called "Anti-Recession Move," if passed, would be a real hypo to home building.

10. Five million Korean veterans are prime prospects for homes (average age —29).

The consensus of people who have good records in forecasting points toward a further softening of the mortgage money market. Coupled with the points I have just mentioned, this should bring about a decided upswing starting about mid-year reaching perhaps more than a million housing starts.

I have been asked what I think about gas. My father started the building end of our business 35 years ago. We have built apartments, theatres, motels and one-family houses ranging in price from $5,000 to $200,000 and wherever available, we have used gas for heating, water heating and cooking with most successful results. We were the first development builders in New York state's Westchester County to use gas heat. Gas presents no problems. Any new house that does not use it is sadly lacking. It simply is not modern.

We have sold houses with air conditioning as standard equipment, as well as optional. If it is included in the price, you have no resistance. If offered as an extra, you get few takers. The F.H.A. commissioner on Dec. 6 issued a "directive" to all field offices, which said: "No otherwise acceptable credit application for a house costing over $15,000 should be turned down just because of the anticipated operating cost of air conditioning. The best opinion of the industry is that the savings on heat, cleaning, laundry and medical expense resulting from air conditioning more than offset the added cost of operating a compressor during the cooling season. Within a few years any house that is not air-conditioned will probably be obsolescent, so F.H.A. should start encouraging the inclusion of air-conditioning.

"Mortgage Credit Analysis is one of the very important safeguards for the families buying a house as well as for the F.H.A. It is important that you who do this work are aware of this responsibility. At the same time you must also realize that over-caution can unfairly deprive an American family from owning a house of its own."

This surely is an indication of which way air conditioning is headed. My advice is that you push it.

The most effective way to introduce your gas consuming products is through the medium of the new home.

Successful merchants always maintain the best show windows.

The model home is the show window of our industry. Get your appliances on display in them and you will influence what goes into other new homes as well as the older homes being modernized.

The sellers' market is now something to look back on with pleasant memories. The day of simply providing shelter has passed. No longer do people buy anything so long as it's a house with a roof over it. We are now and have been for some time in a buyers' market. This means a salesman's market. We have to get off our chairs and start seeing more people, convincing them that now is the time to buy a new home.

That goes for the gas industry too. If you get out and create more prospects and sell more appliances that consume your gas, the distributors, manufacturers and dealers also will get into gear and do the same thing.

We in the building industry are constantly striving to improve our products, to sell it at the lowest possible price at the most attractive terms so all together we can start a chain reaction which should keep going for years and years to come.

For its part the NAHB, recognizing that its most serious 1958 problem will be the production of homes within the financial reach of the mass market, is devoting a major share of its energies to that end. Already encouraging signs are becoming evident that good homes can be built to sell at prices within the reach of most families of modest income in this country. We shall continue, in fact we shall redouble, our efforts in this direction. We are confident that through this route alone we can contribute to a healthy general improvement in current economic conditions while at the same time providing a greater share of our people with the basic security that comes about through home ownership.

We in the home building industry cannot be expected single-handedly to reverse the current situation. Effective action must also be taken to stabilize the rest of the economy by all concerned.

Househeating

(Continued from page 10)

of customers than previously.

As of Nov. 30, 1957, 55 utilities still had in effect some restrictions on new heating installations as compared to 58 companies the year before. The customers of companies under complete or partial restrictions in 1957 represented 18.8 per cent of all households served by the industry, while in 1956 the figure was 19.0 per cent.

This study was based on data provided by individual utilities. The data covered expected new installations, the status of restrictions, prices of competitive heating fuels, and the number of existing residential users and househeating customers. Industry totals are based upon reports received from the companies as well as estimates for non-responding companies.

Manufacturers of gas heating appliances have indicated how valuable this survey has been in assisting them to determine the size and location of the market for their products. Such information is most helpful for profitable production scheduling and marketing policies.

Any manufacturers or utilities requiring additional details should communicate directly with the A. G. A. Bureau of Statistics, rather than with individual utilities.

TOTAL RESIDENTIAL CUSTOMERS OF COMPANIES HAVING GAS HEATING RESTRICTIONS 1950-1957

Year	Residential Customers (millions)	Proportion of Industry Covered
1950	9.5	90%
1951	11.2	92
1952	10.2	93
1953	9.1	92
1954	n.a.	n.a.
1955	6.7	92
1956	5.3	94
1957	5.4	95

n.a. not available.

Management

(Continued from page 31)

groups: (1.) highly sophisticated, experienced, and knowledgeable men; (2.) middlers; and (3.) innocents. He said the gas industry would do well to concentrate its efforts on the highly sophisticated, and the other groups will fall into place quite easily. He discussed current developments in the financial field and covered some of the problems and methods of financing a gas company.

Dr. Ginzberg said that the manpower problem—that of finding really good men willing to work hard for their company—will become more severe in the next few years, despite the population increase. He said one way to solve the shortage of manpower is by hiring capable women. Many women, if given the opportunity, could find themselves a place on the management team, he said.

His prediction for the future: Big increase in population and a rather tight labor force, uncertain quality of that labor force, some improvement, high competition for good people, shortage of good males, and no great number of them who want to work very hard.

During afternoon sessions, committee meetings were held by the Accident Prevention, Comparison of Competitive Services, Financial Management, Insurance, Personnel, Purchasing and Stores, and Rate Committees.

At Monday's Personnel Committee meeting, speakers were:

Arthur R. Laney, Jr., Washington Gas Light Co.; D. R. Edwards, Columbia Gas System Service Corp.; Dwight S. Sargent, Consolidated Edison Co. of New York; A. H. Cannon, Transcontinental Gas Pipe Line Corp.; C. H. zur Neiden, Philadelphia Electric Co.; George A. Absher, Southern California Gas Co.

Also Monday, a panel discussed the problem: "Pipe—Control of Our Key Item." V. C. Parkes, assistant purchasing agent, El Paso Natural Gas Co., was discussion leader. Panelists were: J. A. Lauderdale, Oklahoma Natural Gas Co.; H. E. Wade, The Peoples Gas Light and Coke Co.; H. M. Pendley, Northern Illinois Gas Co.; and C. O. Ellis, Michigan Consolidated Gas Co.

Open committee meetings were held Tuesday afternoon. Hall M. Henry, president, NEGEA Service Corp., was moderator of a gas air conditioning panel discussion. Taking part were: W. H. Loving, Washington Gas Light Co.; David Kerr, Southern Union Gas Co.; Ross Cahal, Jr., Ebasco Services, Inc.; W. J. Crowley, Northern Illinois Gas Co.; and Charles B. Gamble, Jr., Alabama Gas Corp.

Speakers at a purchasing and stores conference were: Fred McCarroll, Texas Eastern Transmission Corp.; Stewart P. Osborn, Texas Eastern Transmission Corp.; Roy Groves, Oklahoma Natural Gas Co.; and Pat H. Butler, Jr., Washington Gas Light Co.

D. L. Sherer was discussion leader of a panel discussion on "Disposition of Obsolete Material." Panelists were: John F. Quigley, Philadelphia Gas Works, UGI; F. W. Kraemer, Jr., New Orleans Public Service, Inc.; A. H. Cannon, Transcontinental Gas Pipe Line Corp.; and Fred Bethurum, Lone Star Gas Co.

At the Rate Committee meeting on Wednesday afternoon Robert S. Quig, rate manager, Ebasco Services, Inc., spoke on "Recent Regulatory Actions—Their Implications for the Gas Industry."

"The Long Term Outlook for Energy Demand and the Use of Gas" was presented by Daniel Parson, director, A. G. A. Bureau of Statistics.

New A.G.A. members

Gas Companies

Quebec Natural Gas Corp., Montreal, Que., Can. (Kenneth B. Lucas, Vice-Pres. & Gen. Mgr.)

United Cities Gas Co., Chicago, Ill. (Ralph L. Sieben, Pres.)

Winnebago Natural Gas Corp., Kaukauna, Wisc. (J. F. Cota, Vice-Pres. & Gen. Mgr.)

Service Companies

NEGEA Service Corp., Cambridge, Mass. (Hall M. Henry, Pres.)

Associate Members

Cramer-Krasselt Co., Milwaukee, Wisc. (H. V. Swenson, Vice-Pres.)

Harry Hendon & Associates, Birmingham, Ala. (Lewis E. Hoffmann, Partner)

H. Zinder & Associates, Inc., Washington, D. C. (H. Zinder, Pres.)

Manufacturer Companies

Air Conditioning Div., American Radiator & Standard Sanitary Corp., New York, N. Y.

Airtherm Manufacturing Co., St. Louis, Mo. (F. P. Kohlbry, Pres.)

Arkla Air Conditioning Corp., Evansville, Ind. (D. W. Weir, Vice-Pres.)

Atlanta Stove Works, Inc., Atlanta, Ga. (Bolling Jones Jr., Pres.)

Bastian-Blessing Co., Chicago, Ill. (E. L. Mills, Vice-Pres.)

Brass Products Co., Detroit, Mich. (S. J. Marentette, Pres. and Secy.)

Fleetwood Manufacturing Co., El Monte, Calif. (Richard E. Goehring, Owner)

Hasche Engineering Co., Johnson City, Tenn. (R. Leonard Hasche, Pres.)

Kirk Industries, Inc., South Norwalk, Conn. (Kirk C. Kirkorian, Pres.)

R. & A. Main, Ltd., Edmonton, Middlesex, Eng. (A. J. Adam, Chief Chemist)

McQuay-Norris Manufacturing Co., St. Louis, Mo. (J. C. Taschler, Mgr. Industrial Sales Div.)

Montague Co., San Leandro, Calif. (Robert M. Whalen, Sales Mgr.)

National Gas Appliance Corp., Chicago, Ill. (Walker B. Sheriff, Pres.)

Scully Signal Co., Melrose, Mass. (Frank P. Scully, Pres.)

Shaver Boiler & Equipment Co., Ft. Worth, Texas. (C. E. Shaver, Pres.)

M. J. Wilkoff Co., Pittsburgh, Pa. (M. J. Wilkoff, Partner)

York Div., Borg-Warner Corp., York, Pa. (R. F. Lauer, Vice-Pres. & Dir. Engrng.)

Individual Members

Elsie M. Alcorn, Milwaukee Gas Light Co., Milwaukee, Wisc.

Cooper H. Allen, McWane Cast Iron Pipe Co., Kansas City, Mo.

Carl C. Anderson, U. S. Bureau of Mines, Washington, D. C.

Elmer L. Anderson, Philco Distributors, Inc., Chicago, Ill.

James C. Anderson, The East Ohio Gas Co., Cleveland, Ohio.

Dwight R. Anneaux, Whirlpool Corp., St. Joseph, Mich.

Henry Apthorp, The East Ohio Gas Co., Cleveland, Ohio.

Phillip E. Arnold, Milwaukee Gas Light Co., Milwaukee, Wisc.

John M. Artim, Pacific Gas & Electric Co., San Francisco, Calif.

Harold V. Atwell, The Texas Co., Beacon, N. Y.

Homer E. Barr, Hope Natural Gas Co., Clarksburg, W. Va.

R. E. Barry, Wisconsin Power & Light Co., Berlin, Wisc.

Paul E. Beech, The Peoples Natural Gas Co., Pittsburgh, Pa.

Lyle Bellamy, The East Ohio Gas Co.,

Cleveland, Ohio.
Joseph N. Betz, Scranton-Spring Brook Water Service Co., Wilkes-Barre, Pa.
Raymond F. Blackwell, Waynesboro Gas Co., Waynesboro, Pa.
Gerald Booth, Pacific Gas & Electric Co., Marysville, Calif.
Richard C. Boulet, Milwaukee Gas Light Co., Milwaukee, Wisc.
William M. Bowers, Hope Natural Gas Co., Clarksburg, W. Va.
W. R. Bowra Jr., Long Island Lighting Co., Mineola, N. Y.
A. C. Boyer, The Peoples Natural Gas Co., Pittsburgh, Pa.
Gaston L. Breckenridge, Rochester Gas & Electric Corp., Rochester, N. Y.
John T. Brown, Equitable Gas Co., Pittsburgh, Pa.
Walter H. Browning, Public Service Electric & Gas Co., Camden, N. J.
Frank I. Buck, Arizona Public Service Co., Phoenix, Ariz.
Fred J. Burford, Addressograph-Multigraph Corp., Cleveland, Ohio.
Foster B. Burnett, Rochester Gas & Electric Corp., Rochester, N. Y.
Edwin T. Burritt, Rochester Gas & Electric Corp., Hilton, N. Y.
Robert K. Butcher, Robert K. Butcher & Associates, Shreveport, La.

Douglas A. Campbell, Kidder, Peabody & Co., New York, N. Y.
Raymond F. Caporgno, Pacific Gas & Electric Co., Petaluma, Calif.
Owen S. Carter, The Consumers' Gas Co., Toronto, Ont., Can.
Phillip E. Casper, Milwaukee Gas Light Co., Milwaukee, Wisc.
Joseph J. Cassidy, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Earl B. Churchill, Boston Gas Co., East Braintree, Mass.
Harry E. Clark, Knoxville Utilities Board, Knoxville, Tenn.
James N. Clayton Jr., Arkansas Louisiana Gas Co., Shreveport, La.
Frederick W. Cole, Southern Counties Gas Co., Los Angeles, Calif.
Raymond W. Cole, Baltimore Gas & Electric Co., Baltimore, Md.
Walter J. Conlon, Stewart-Warner Corp., Lebanon, Ind.
Dan N. Cook, Southern Counties Gas Co., El Monte, Calif.
Benjamin H. Cooksey, Hope Natural Gas Co., Clarksburg, W. Va.
Robert W. Cornwell, Michigan Consolidated Gas Co., Detroit, Mich.
George F. Cozad, The East Ohio Gas Co., Cleveland, Ohio.
Frank M. Croghan, Hope Natural Gas Co., Clarksburg, W. Va.
Chester T. Crumbaker, Western Kentucky Gas Co., Owensboro, Ky.
George A. Cunningham, Rockwell Manufacturing Co., Charlotte, N. C.
J. T. Cunningham, Clarksville Gas Dept., Clarksville, Tenn.

Everett G. Dabson, The Texas Co., New York, N. Y.
L. P. Damewood, Southern Counties Gas Co., Los Angeles, Calif.
Raymond A. Day, The East Ohio Gas Co., Cleveland, Ohio.
James E. DeGrace, American Louisiana Pipe Line Co., Detroit, Mich.
C. W. Delvey, Pacific Gas & Electric Co., San Francisco, Calif.
Kenneth C. Deper, Public Service Electric & Gas Co., Paterson, N. J.
Howard G. Doersching, Milwaukee Gas Light Co., Milwaukee, Wisc.
James D. Dunlap, Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
Raymond O. Dyer, Southern Counties Gas Co., El Monte, Calif.

Charles F. Eder, The East Ohio Gas Co., Cleveland, Ohio.
Fred E. Edwards, San Diego Gas & Electric Co., San Diego, Calif.
W. H. Ekstrand, San Diego Gas & Electric Co., San Diego, Calif.
C. M. Ellenberger, The Peoples Natural Gas Co., Apollo, Pa.
Edward G. Engel, Inner-Tite Yara Engineering Corp., Elizabeth, N. J.

S. J. Fitzpatrick, International Business Machines Corp., San Francisco, Calif.
Alex R. Ford, Michigan Consolidated Gas Co., Detroit, Mich.
Arthur W. Foster, Hope Natural Gas Co., Clarksburg, W. Va.
John S. Fouch, International Business Machines Corp., Chicago, Ill.
Larz B. Foy, Washington Gas Light Co., Washington, D. C.
Warren E. Fuhrman, Milwaukee Gas Light Co., Milwaukee, Wisc.

William J. Goblin, The East Ohio Gas Co., Cleveland, Ohio.
Richard E. Goehring, Fleetwood Manufacturing Co., El Monte, Calif.
Oran K. Grani, Southern Counties Gas Co., Claremont, Calif.
Paul L. Gray, Hope Natural Gas Co., Clarksburg, W. Va.
Franklin W. Grossheim, Cincinnati Gas & Electric Co., Cincinnati, Ohio.
Frederick F. Guse, Milwaukee Gas Light Co., Milwaukee, Wisc.

H. Hagen, Central Electric & Gas Co., Lincoln, Nebr.
Wayne L. Hall, International Business Machines Corp., Chicago, Ill.
Robert A. Hamilton Jr., R. A. Hamilton Corp., Hackensack, N. J.
Wayne D. Harbin, Arthur Young & Co., New York, N. Y.
W. Harkness, Public Service Electric & Gas Co., Passaic, N. J.
LeRoy W. Harris, Michigan Wisconsin Pipeline Co., Fairfield, Iowa.
Kenneth N. Hawk, The East Ohio Gas Co., Cleveland, Ohio.
Eugene B. Hedges, Michigan Gas Storage Co., Jackson, Mich.
Thomas K. Hendrix, Mueller Co., Decatur, Ill.
Charles D. Hennessy, Pacific Gas & Electric Co., San Carlos, Calif.
Guy T. Henry, Providence Gas Co., Providence, R. I.
James B. Henwood, Philadelphia Gas Works, Div. U.G.I. Co., Philadelphia, Pa.
Robert M. Hoffer, Michigan-Wisconsin Pipe Line Co., Detroit, Mich.
Clyde W. Hollenshead, United Gas Pipe Line Co., Shreveport, La.
Richard B. Hollman, Sanborn Map Co., New York, N. Y.
Harry H. Hoover, The East Ohio Gas Co., Cleveland, Ohio.
E. S. Hopkins, San Diego Gas & Electric Co., El Cajon, Calif.
Jay N. Hoppe, Cities Service Petroleum, Inc., New York, N. Y.
David W. Hoppock, Bryant Manufacturing Co., Indianapolis, Ind.
Bruce Humphrey, American Louisiana Pipe Line Co., Detroit, Mich.
Matthew S. Hunter, The East Ohio Gas Co., Cleveland, Ohio.

Paul R. Irons, The East Ohio Gas Co., Cleveland, Ohio.
Andrew A. Irwin, Inland Natural Gas Co., Ltd., Vancouver, B. C., Can.
John A. Irwin, Panhandle Eastern Pipe Line Co., Detroit, Mich.
Raymond M. Jackson, United Fuel Gas Co., Charleston, W. Va.
A. A. Jacquot, Jacquot Co., Los Angeles, Calif.
James W. Jamison, Regal Heater Corp., Los Angeles, Calif.
James I. Johnson, Long Island Lighting Co., Mineola, N. Y.

Jack Kamrar, Arizona Public Service Co., Phoenix, Ariz.
M. L. Kapp, Interstate Power Co., Dubuque, Iowa.
J. Kean, Elizabethtown Consolidated Gas Co., Elizabeth, N. J.
John J. Kelly, The East Ohio Gas Co., Cleveland, Ohio.
Robert C. Kenan, Koppers Co., Inc., Pittsburgh, Pa.
Charles J. Kentler Jr., Rockwell Manufacturing Co., New York, N. Y.
W. S. Kimball Jr., Mayfair Cabinet Corp., Fort Worth, Texas.
Lloyd C. King, The Peoples Natural Gas Co., Pittsburgh, Pa.
Albert J. Klemmer, Rochester Gas & Electric Corp., Rochester, N. Y.
George Kline, The Peoples Natural Gas Co., Pittsburgh, Pa.
J. Krauss, Long Island Lighting Co., Mineola, N. Y.
J. H. Kreft, Southern California Gas Co., Los Angeles, Calif.
Gilbert O. Kuhen, Carrier Corp., Syracuse, N. Y.

John E. Lacey, Public Service Electric & Gas Co., Jersey City, N. J.
Hubert B. Lafferty, El Paso Natural Gas Co., El Paso, Texas.
William S. LaLonde, Public Service Electric & Gas Co., Burlington, N. J.
John Lammert, The Peoples Natural Gas Co., Pittsburgh, Pa.
Paul Lancefield, Portland Gas & Coke Co., Portland, Ore.
Everett A. Larson, The Hartford Electric Light Co., Wethersfield, Conn.
Joel K. Lee, Philco Corp., Columbus, Ohio.
Allen L. Loken, Southern California Gas Co., Los Angeles, Calif.
Frank J. Lydick, The Peoples Natural Gas Co., Pittsburgh, Pa.

Thomas Lynch, Carnegie Natural Gas Co., Pittsburgh, Pa.
George H. Lyon, Rochester Gas & Electric Corp., Rochester, N. Y.

Norman B. Macaulay, Mystic Valley Gas Co., Malden, Mass.
Walter I. Mackey, The Cramer-Krasselt Co., Milwaukee, Wisc.
C. E. MacNeil, Southern Counties Gas Co., Los Angeles, Calif.
John Madden Jr., U. S. Pipe & Foundry Co., New York, N. Y.
Wesley G. Maidment, Long Island Lighting Co., Mineola, N. Y.
R. M. Marberry, Whirlpool Corp., St. Joseph, Mich.
Graham R. Mattocks, Baltimore Gas & Electric Co., Baltimore, Md.
W. J. Mayfield, Portland Gas & Coke Co., Portland, Ore.
Bruce A. McCandless, Milwaukee Gas Light Co., Milwaukee, Wisc.
Robert P. McCants, United Gas Corp., Houston, Texas.
Robert E. McCarthy, Equitable Gas Co., Pittsburgh, Pa.
Roy K. McDaniel, The Peoples Natural Gas Co., Pittsburgh, Pa.
Gerald T. McDonald, The East Ohio Gas Co., Cleveland, Ohio.
William D. McLean, Francisco & Jacobus, New York, N. Y.
Ronald S. McMurray, Norton-McMurray Manufacturing Co., Chicago, Ill.
Kenneth W. McPhee, Lakeland Natural Gas Ltd., Kingston, Ont., Can.
B. McWherter, Southwest Gas Corp., Coolidge, Ariz.
G. Ed Meade, Inland Natural Gas Co., Ltd., Vancouver, B. C.
Charles L. Mee, Northern Illinois Gas Co., Glenview, Ill.
Donald C. Melrose, The East Ohio Gas Co., Cleveland, Ohio.
Frank J. Merriman, The East Ohio Gas Co., Cleveland, Ohio.
Richard M. Merriman, Ried & Priest, Washington, D. C.
Warren E. Mickelson, Central Electric & Gas Co., Lincoln, Nebr.
Gerald E. Miller, The Consumers' Gas Co., Toronto, Ontario, Can.
Robert A. Mittelstaedt, The East Ohio Gas Co., Cleveland, Ohio.
Clifford A. Mogk, Michigan Consolidated Gas Co., Detroit, Mich.
Joseph E. Morna, Missouri Natural Gas Co., Farmington, Mo.
R. C. Morton, Southern Counties Gas Co., Los Angeles, Calif.
Luke P. Mulvihill, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Robert E. Murray, Laclede Gas Co., St. Louis, Mo.

Adrian C. Nadon, San Diego Gas & Electric Co., Oceanside, Calif.
James H. Naudain, Long Island Lighting Co., Mineola, N. Y.
Martha W. Nichol, Iroquois Gas Corp., Buffalo, N. Y.
Henry O. Norton, Philco Corp., Philadelphia, Pa.

Marie O'Brien, Providence Gas Co., Providence, R. I.
Lloyd L. Oman, Northern States Power Co., Minneapolis, Minn.
Lawrence R. O'Reilly, Maxon Premix Burner Co., Chicago, Ill.
William H. Otto, Laclede Gas Co., St. Louis, Mo.

George R. Pain, Haskins & Sells, Honolulu, Hawaii.
Paschal A. Palmer, The Sprague Meter Co., Houston, Texas.
Gaston H. Parrish, Humble Oil & Ref. Co., Corpus Christi, Texas.
Francis J. Parsons Jr., Pacific Gas & Electric Co., San Francisco, Calif.
Donald H. Parsons, Portland Gas & Coke Co., Portland, Ore.
George F. Peacock, United Gas Corp., Houston, Texas.
Vern E. Pearson, Minneapolis Gas Co., Minneapolis, Minn.
Charles N. Perry, Rockwell Manufacturing Co., Porterville, Calif.
R. E. Phenicie, Wisconsin Public Service Corp., Milwaukee, Wisc.
Douglas B. Pollitt, Public Service Electric & Gas Co., Springfield, N. J.
Robert J. Postlethwaite, Public Service Electric & Gas Co., Jersey City, N. J.
Harry A. Poth Jr., Reid & Priest, Washington, D. C.
Sherman E. Potter, The Gas Service Co., Ft. Scott, Kan.
R. W. Powell, The Peoples Natural Gas Co., Greensburg, Pa.
W. O. Powell, San Diego Gas & Electric Co., San Diego, Calif.
Edna Poyner, Norge Sales Corp., San Francisco, Calif.
James C. Preston, Michigan Consolidated Gas Co., Cadillac, Mich.
Frederic L. Putman Jr., Buzzards Bay Gas Co., Hyannis, Mass.

Thomas J. Quayle, The East Ohio Gas Co., Cleveland, Ohio.

George E. Reid, The East Ohio Gas Co., Cleveland, Ohio.
Virgil Rittmann, El Paso Natural Gas Co., El Paso, Texas.
David T. Roadley, The East Ohio Gas Co., Cleveland, Ohio.
Chauncey W. Robinson, Natural Gas Odorizing, Inc., Houston, Tex.
E. J. Ross, Pacific Gas & Electric Co., San Francisco, Calif.
A. D. Royalty, Philco Corp., Memphis, Tenn.

John F. Sanders, The Hartford Electric Light Co., Wethersfield, Conn.
J. R. Savage, Portland Gas & Coke Co., Portland, Ore.
John E. Schmidt, The East Ohio Gas Co., Cleveland, Ohio.
L. E. Schmidt, Equitable Gas Co., Pittsburgh, Pa.
E. G. Schneider, Rochester Gas & Electric Corp., Rochester, N. Y.
Joseph E. Schnorr, Rochester Gas & Electric Corp., Rochester, N. Y.
Charles L. Scott, The East Ohio Gas Co., Cleveland, Ohio.
J. Phillip Sherwood, Panhandle Eastern Pipe Line Co., New York, N. Y.
Norman T. Shideler, Pittsburgh Coke & Chemical Co., Pittsburgh, Pa.
James B. Shiver, South Jersey Gas Co., Atlantic City, N. J.
B. Leonard Sielschott, West Ohio Gas Co., Lima, Ohio.
Vincent E. Singleton, Southern Counties Gas Co., Los Angeles, Calif.
Peter P. Skule, The East Ohio Gas Co., Cleveland, Ohio.
Kendall J. Smith, North Shore Gas Co., Waukegan, Ill.
John A. Spencer, The Consumers' Gas Co. of Toronto, Ottawa, Ont., Can.
L. Robert Spencer Jr., Scranton-Spring Brook Water Service Co., Wilkes-Barre, Pa.
Don Starr, The Payne Co., La Puente, Calif.
Whitney K. Stearns, U. S. Pipe & Foundry Co., Boston, Mass.
Clarence H. Stiles, United Fuel Gas Co., Charleston, W. Va.
C. M. Stringer, Pacific Gas & Electric Co., San Francisco, Calif.
C. F. Suesserott, General Electric Co., Tyler, Texas.
James F. Surala, The East Ohio Gas Co., Cleveland, Ohio.
P. Suransky, Pacific Gas & Electric Co., San Francisco, Calif.
R. C. Swagler, The Peoples Natural Gas Co., Glenshaw, Pa.
H. V. Swenson, The Cramer-Krasselt Co., Milwaukee, Wisc.
Leonard C. Swing, Hope Natural Gas Co., Clarksburg, W. Va.

William T. Taylor, Michigan Consolidated Gas Co., Detroit, Mich.
Donald W. Thernes, The East Ohio Gas Co., Cleveland, Ohio.
Wendell L. Thompson, American Louisiana Pipe Line Co., Muncie, Ind.
G. H. Towery, United Cities Gas Co., Tupelo, Miss.
M. Twomey, The Brooklyn Union Gas Co., Brooklyn, N. Y.

E. J. van Goor, Gemeente-Energiebedrijf, Rotterdam, Holland.

J. Kenneth Wasley, The East Ohio Gas Co., Cleveland, Ohio.
John M. Wege, Ralph E. Davis, Houston, Texas.
Andrew R. Welsh, The East Ohio Gas Co., Youngstown, Ohio.
James H. Weyland, Texas Eastern Transmission Corp., Houston, Texas.
Buell E. White, Michigan Consolidated Gas Co., Traverse City, Mich.
Major L. White Jr., Scranton-Spring Brook Water Service Co., Wilkes-Barre, Pa.
J. V. Whittlesey, Standard Oil Co. of N. J., New York, N. Y.
C. J. Wieboldt, Commonwealth Services, Inc., New York, N. Y.
Thomas B. Williams, The East Ohio Gas Co., Cleveland, Ohio.
Paul M. Wright, The Peoples Natural Gas Co., Monongahela, Pa.

Frederick I. Yewman, Lakeland Natural Gas Ltd., Kingston, Ont., Can.
Herbert H. Young, Michigan Gas Storage Co., Jackson, Mich.

Charles E. Zeigler, Public Service Co. of N. C., Inc., Gastonia, N. C.

Industry news

Maryland Utilities Association elects Carder

ROBERT C. CARDER, manager of the Potomac Edison Co., Hagerstown, Md., was elected president of the Maryland Utilities Association at the annual business conference held in Baltimore on April 11. He succeeds Robert W. Wilson, vice-president of the Potomac Electric Power Company, Washington, D. C., who was elected a director of the association.

Other officers elected to serve in the ensuing year are: first vice-president, Austin E. Penn, Baltimore Gas & Electric Co.; 2nd vice-president, H. Holmes Vogel, Chesapeake & Potomac Telephone Co.; treasurer Raymond C. Brehaut, Frederick Gas Co., Inc.; and secretary (re-elected), Robert L. Smith, retired from The Potomac Edison Co.

Directors representing the gas industry are: Charles P. Crane, Baltimore Gas & Electric Co.; George B. Daniel, Citizens Gas Co.; and Otis H. Ritenour, Washington Gas Light Co.

The association voted to hold this year's fall meeting at the Cavalier Club, Virginia Beach, Va.

Gas industry sales and revenues reach record highs in 1957

GAS UTILITY and pipeline industry sales and revenues reached new all-time highs in 1957, exceeding earlier estimates reported in the industry's annual year-end review issued by the American Gas Association in December.

Sales climbed to a record peak of 75,617 million therms during the 12-month period ending Dec. 31, 1957, a 3.8 per cent gain over the 72,846 million therms sold in 1956. Revenues from sales to ultimate consumers topped the $4 billion mark, totaling $4,072 million in 1957 for a gain of 6.2 per cent over the previous year.

The gas industry's total operating revenues from sales to ultimate customers and sales for resale reached $6,372 million last year, up 9.0 per cent or $525 million over the record high of $5,847 million established in 1956. Net operating revenues advanced from $787 million in 1956 to $836 million last year, a gain of 6.2 per cent. Net income jumped 6.3 per cent for a record total of $658 million during 1957.

Total taxes for the calendar year 1957 were $749 million, and represented 11.8 per cent of the total operating revenues received by the gas utility industry. The tax figure is 1.8 per cent less than the $763 million paid at the end of 1956 and nearly 14 per cent greater than the net income available from stockholder dividends and future expansion. The industry's total operating revenue deductions of $5,536 million last year amounted to 86.9 per cent of total operating revenues, 0.4 per cent higher than in 1956.

A. G. A. also reports that fourth quarter sales and revenues in 1957 moved well ahead of the comparable 1956 period. Gas sales during the fourth quarter hit 19,731 million therms, an increase of 8.3 per cent over the 18,226 million therms sold in the same quarter of 1956.

Gas industry sales during January 1958, continued the upward trend set in the last quarter of 1957. January sales amounted to 8,799 million therms, 5.5 per cent higher than a year ago when the month's sales totaled 8,339 million therms.

Gas utility and pipeline construction expenditures showed a substantial gain in the last quarter of 1957, hitting $559 million for an increase of 18.2 per cent over the fourth quarter of 1956. Construction expenditures last year also set a new all-time record, totaling $2,010 million for the 12-month period ending Dec. 31, 1957.

Northwestern Utilities expansion program to cost $6.5 million

A RECORD expansion program to improve and extend its pipeline system and to bring natural gas service to new areas is planned for 1958 by Northwestern Utilities, Ltd., it is announced by Murray E. Stewart, general manager. The cost is estimated at $6.5 million.

Major item is construction of a 16-inch line from the Pembina field to Edmonton, a distance of 70 miles, at an estimated cost of $3.8 million on which work has already begun. Northwestern will buy residue gas produced with crude oil at the Pembina field. Quantities to be purchased are estimated at 65 million cubic feet per day.

"The gathering, processing and marketing of this oilfield residue gas will achieve a measure of conservation which has not been possible to date," Mr. Stewart said. "It is made possible by the efforts of provincial conservation authorities and by the expenditure of major sums by the producers in the Pembina field."

Extensions to the company's present distribution systems will cost more than $400,000 this year. More than $700,000 is provided for installations for new customers, and for measuring and pressure control equipment.

Improvements to the company's transmission and distribution systems will total $320,000.

Research conference

A DYNAMIC, up-to-the-minute program with special emphasis on the needs of the West Coast area has been developed for the forthcoming A. G. A.-PCGA Research and Utilization Conference, to be held June 4-5 at the Ambassador Hotel, Los Angeles. J. H. Hollingsworth, manager-design, Day & Night and Payne Division of Carrier Corp., is general chairman of the conference; and Guy Corfield, utilization engineer, Southern Counties Gas Co., is chairman of the Program Committee. Technical, executive, and sales leaders will present papers on gas air conditioning, experiences with low Btu pilots, cooking, water heating, clothes drying, codes and regulations, manufacturer research, the PAR Plan, and other timely subjects. Luncheons will be addressed by A. G. A. Managing Director C. S. Stackpole, and by a rocket and missiles fuel scientist from the California Institute of Technology.

CGA moves to larger quarters

On Jan. 1, 1957, there were five persons on the staff of The Canadian Gas Association. With the rapid rise in activities, the staff has grown to the 23 people shown, and has recently moved to new headquarters at 2532 Yonge St., Toronto. Officers of CGA are (seated, l. to r.): J. E. Burke, treasurer; A. C. Walker, secretary; W. H. Dalton, managing director; N. E. Wilson, chief engineer

Round-up of utility annual reports for the year 1957

• **Arkansas Louisiana Gas Co.**'s annual report shows gross operating revenues of $58 million, up $3.5 million over 1956. Net income, also up, was nearly $8.5 million, as compared with slightly over $7 million in 1956. The report states that in 1957 a subsidiary, Arkla Air Conditioning Corp., led the nation in sales of gas air conditioning equipment.

• **Consolidated Edison Co.** announces 1957 operating revenues from gas sales totaling $81.5 million, nearly $2 million more than in 1956. Over 38 billion cubic feet of gas was sold, an increase of 2.2 per cent. Of this, 11 billion cubic feet of gas was for residential househeating.

• **Consumers Power Co.** had gas revenues of $72.5 million, as compared with nearly $69 million the year before. About 60 per cent of these revenues came for space heating customers. Sales of gas totaled 80.7 billion cubic feet, an increase of 6 per cent. The number of gas customers rose by nearly 20,000 to 463,000.

• **Mountain Fuel Supply Co.** notes in its report that natural gas operating revenues came to $25 million, net income to nearly $3.8 million. Both were increases over 1956. The number of customers rose by nearly 9,000 to 144,000 and gas sales increased by nearly 2 billion cubic feet for a total of nearly 68 billion cubic feet.

• **Northern Indiana Public Service Co.** reports the following data on gas: operating revenues up $1 million to $36 million; sales in therms down 6 million for a total of 471 million therms, due to a decrease of about 20 billion therms in interruptible sales; and number of customers up about 6,000 for a total of 266,000. The report mentions that the company won an A. G. A. Accident Prevention Award during the year.

• **San Diego Gas & Electric Co.** announces that gas operating revenues rose from $15.8 million to $16.4 million, and net gas operating income came to $1.5 million, slightly below the year before.

• **Tennessee Gas Transmission Corp.** announces operating revenues of $313 million, about $47 million more than in 1956 (with original 1956 figures restated to reflect rate settlement). Net income and special credit after taxes was $38 million, a rise of $4 million.

NEGA holds annual meeting, elects Johnston, Copeland

A. W. JOHNSTON, vice-president in charge of operations of Boston Gas Co., was elected president of the New England Gas Association at that group's 32nd annual meeting held March 20-21 in Boston.

Elected first vice-president is G. R. Copeland, president of Algonquin Gas Transmission Co.; second vice-president is G. W. Williams, executive vice-president of Connecticut Light and Power Co.; and treasurer is Otto Price, vice-president in charge of accounting of Boston Gas Co. Clark Belden, NEGA managing director, was re-elected clerk.

Mr. Belden presented three special achievement awards, one of which broke a precedent in that its recipient is not a member of NEGA. This recipient is A. G. A. Managing Director C. S. Stackpole. The other recipients of awards were John L. Turnan of Worcester Gas Light Co., and Charles Byron of Connecticut Light and Power Co. Mr. Belden followed the presentations with a report on the structure and accomplishments of NEGA.

"Shall We Allow This to Happen?" was the topic of Edgar G. Rhodes, president and general manager of New Britain Gas Light Co., and outgoing president of NEGA. The title of the talk refers to a way of life depicted in the best-selling novel, *Atlas Shrugged*. Mr. Rhodes' talk warned against this antithesis of free enterprise.

Final speaker of the first morning was Dr. Charles Franklin Phillips, president of Bates College, on the topic "The Next United States—A Challenge to You."

The annual National Gas Industry Panorama, featuring seven speakers, was held on the second morning of the convention. C. S. Stackpole was master of ceremonies.

The accent was again on free enterprise, in the talk of A. G. A. President Robert W. Otto, chairman of Laclede Gas Co. GAMA President Clifford V. Coons, executive vice-president of Rheem Manufacturing Co., and GAMA Managing Director Harold Massey, told of gas appliance manufacturers' activities —both individual activities and cooperative activities through GAMA.

Other speakers were E. H. Smoker, president of United Gas Improvement Co., who spoke on industry research; Thomas H. Lane, senior vice-president of Lennen & Newell advertising agency, on the industry's TV sponsorship; Christy Payne Jr., vice-president of Peoples Natural Gas Co., on industry promotional efforts; and Seward Abbott, utilization engineer of A. G. A.'s Washington office, on the Washington picture.

Mrs. America, scheduled to speak at the Panorama, was delayed by weather conditions, and spoke instead at the afternoon session. She told of the public relations value of the Mrs. America contest.

The afternoons during the convention were mainly devoted to panel discussions. The first panel, on the topic "Accounting Trends," was led by Lester E. Reynolds, vice-president and treasurer, Connecticut Light & Power Co.

The remainder of the afternoon was devoted to the economics of future gas operations. First, there was a talk by William B. Tippy, president of Commonwealth Services, on "Trends in Distribution Expenses." Next, an operating panel was led by Fred H. Faulstich, vice-president, Springfield Gas Light Co.

The second afternoon started off with a panel discussion on the topic "How Carefully Do We Listen?" Chairman of this public relations panel was Clark Belden.

Concluding the afternoon was the discussion of trends in selling gas. Herman Koester Jr., president of W. Wirt Young & Associates, offered his views on "Commercial and Industrial Possibilities," following which a residential sales panel discussion was led by John J. Quinn, vice-president, Boston Gas Co.

Officers of the New England Gas Association are (l. to r.): seated—Andrew W. Johnston, incoming president; Edgar G. Rhodes, retiring president; George R. Copeland, first vice-president; standing—Gilbert J. Williams, second vice-president; Otto Price, treasurer; and Clark Belden, clerk

Gas appliance manufacturers hold 23rd annual meeting

ABOUT 375 representatives of gas appliance manufacturing companies attended the 23rd annual convention of the Gas Appliance Manufacturers Association, held at White Sulphur Springs, W. Va., March 31-April 2.

The day preceding the conference was devoted to a meeting of the board. GAMA President Clifford V. Coons, executive vice-president of Rheem Manufacturing Co., in his annual report to the GAMA board, cited the many advances made possible by manufacturers working through GAMA—advances which otherwise would have been impossible.

"As an industry," said Mr. Coon, "we are the envy of our competitors. Not because of our size, but because we practice the doctrine of cooperation and because we have something that we have nurtured and developed since our industry emerged as a dynamic economic force. We have unity and mutual determination. More than that, we have the products, the fuel, and know-how. We have the technical knowledge, the promotions, the advertising and the public relations."

Mr. Coons urged manufacturers to "stay too busy educating the consumer to talk recession."

Mr. Coons and other GAMA officers and directors will automatically remain in office until the next GAMA annual meeting; this is due to a change from the past procedure which called for terms of office to expire in October.

Opening remarks at the March 31 general session luncheon were made by President Coons. Main speaker at the luncheon was FHA commissioner Norman Mason, who talked about recent and projected FHA actions to stimulate residential building and modernization.

His talk was followed by a panel on "Breaking the Bottlenecks to Better Housing," moderated by Perry Prentice, of *House and Home*. Panel members foresaw an upturn in the housing market. Bertram J. Lange of *Life* gave some results of his magazine's study on consumer expenditures.

April 1 started with a general session breakfast, on the theme "Guideposts to Sales." A. G. A. President Robert W. Otto, chairman of Laclede Gas Co., who presided, praised manufacturers for developing product improvements more rapidly than at any time since the starting days of the industry.

The first speaker, A. G. A. Managing Director C. S. Stackpole, noted that an A. G. A. survey has shown an existing market potential for 57 million new residential gas appliances and equipment items in five years—not counting air conditioning and refrigeration—outlined a long list of achieved and prospective product developments. He urged the audience to "Go out and sell . . . Advertise, promote, and sell harder than ever before."

The second speaker was M. W. Jacobs, chairman of the A. G. A. Gas Industry Development Committee, and vice-president of Pacific Lighting Co., who asked for even greater teamwork between manufacturers and utilities. Mr. Jacobs discussed the wide impact of changes in marketing and marketing conditions during recent years. He noted the mounting relative importance of the new construction market, with its growing emphasis on built-in appliances, and the key role of mass media in pre-selling or conditioning markets.

At the dinner that evening, meritorious service awards were presented to the following: Chester E. Blome, Metalbestos Division of William Wallace Co.; T. D. Bromley, Dura-Vent Corp.; Keith T. Davis, Carrier Corp.; Julius Klein, Caloric Appliance Corp.; Walter Lee, Major Controls Co.; Norman Millard, Philco Corp.; Frank J. Nunlist, Mueller Climatrol Division of Worthington Corp.; R. B. Robinson, Whirlpool Corp.; Robert I. Warnecke, Roberts-Gordon Appliance Corp.; Harley Weatherly, Chattanooga Royal Co.; and Don Winegardner, The Majestic Co.

The annual Supplers Breakfast was held on the third morning of the convention. This was followed by a Home Improvement Council film, "A Program for Profit and Pride," division meetings, a second board meeting, and a closing luncheon.

Attending GAMA convention are five past presidents, who are shown offering helping hands to the incumbent GAMA president, C. V. Coons. Left to right are: top—J. F. Donnelly, A. O. Smith Corp.; T. T. Arden, Robertshaw-Fulton Controls Co.; Julius Klein, Caloric Appliance Corp.; bottom—S. H. Hobson, Geo. D. Roper Corp.; Mr. Coons, Rheem Manufacturing Co.; Sheldon Coleman, Coleman Co.

New county survey

THE A. G. A. Bureau of Statistics now has available copies of its Survey of Residential Gas Service by County. This detailed publication provides information, for each county in the United States, on the name of the gas company providing service, the characteristics of the gas distributed (including Btu value, specific gravity and pressure at the consumer's meter), the number of residential gas customers, estimated total families served by gas, and approximate saturations of gas ranges, water heaters, dryers, and heating equipment. Included also is a map showing which U. S. counties have utility gas service. All data refer to Oct. 31, 1957. Copies of the publication are available from A. G. A. at $3 each. A similar publication was last issued in 1953 and contains statistics relating to the previous fall.

Homemaker contest

MRS. AMERICA, INC., in conjunction with the American Gas Association and a host of National Advertisers is conducting the 20th annual Mrs. America Contest, May 1-13 in Fort Lauderdale, Fla. Eliminations were held in each of the 48 states and the District of Columbia. Among the 1958 sponsoring organizations are: American Gas Association; The Best Foods, Inc.; City of Fort Lauderdale, Fla.; Gas Appliance Manufacturers Association; The Gorham Co.; *Parents';* Robertshaw-Fulton Controls Co.; Ruud Manufacturing Co.; Singer Sewing Machine Co.; Standard Brands, Inc.; Thomas Organ Co.; The Toni Co.; U. S. Treasury Department; West Bend Aluminum Co.; and Wilson & Co. The New York offices of Mrs. America, Inc. have been moved to 527 Madison Ave., New York 22, N. Y.

To start construction

CONSUMERS' GAS CO. will soon start construction of transmission lines and distribution systems that will provide natural gas service in about 20 Georgian Bay and Ottawa Valley communities this year. This program will provide employment for more than 500 men in the communities concerned. As many as possible of the men required will be enlisted from the areas where the construction work will be carried out. In the area north and west of Toronto, communities to receive natural gas service this year will be Barrie, Stayner, Collingwood, Thornbury, Meaford, Owen Sound, Victoria Harbour, Midland and Penetanguishene. The main eight-inch Georgian Bay transmission line will start from the Trans-Canada sales station north of Barrie, running along Highway 26 to Owen Sound.

Secondary stress seminar held at Battelle Memorial Institute

Shown among participants in the Battelle Memorial Institute secondary stress seminar are Battelle's George McClure (3rd from r., 2nd row), who conducted the seminar, and El Paso Natural's Steve Sawyer (3rd from l., 1st row), who is chairman of the committee which sponsored the seminar. The sponsoring committee was the Branch Connections and Secondary Stress Supervising Committee

A SEMINAR informing industry members on the most effective use of strain gauges in the field analysis of secondary stresses was conducted at Battelle Memorial Institute. Nearly 20 representatives of pipeline companies attended this seminar held in Columbus, Ohio, March 18-19.

At present, Battelle is advising companies participating in that part of the Pipeline Research Committee program which deals with the detection and elimination of secondary stresses within gas transmission pipelines. The aim of this research is to achieve better pipeline design.

The purpose of the seminar was two-fold: first, to allow those who have made strain gauge installations on their pipelines to summarize the results obtained so far, and to exchange information on the field problems encountered; and second, to discuss methods of analyzing experimental data. The results of this seminar are available in the form of a summary report of the meeting.

Data from recent Battelle projects are now being analyzed and compiled into a secondary stress summary report which will bring the industry up to date in this technique.

Highlights of cases before the Federal Power Commission

Bureau of Statistics, American Gas Association

Certificate cases

● **El Paso Natural Gas Co.** received authorization to construct 216 miles of main pipeline, 533 miles of field lines, and 86,750 compressor horsepower in Arizona, Texas, and New Mexico. Over-all cost would be $107 million. These facilities will be used to supply an additional 185 million cubic feet of natural gas per day to existing customers in Arizona and California. In another application, the company received authority to construct only field facilities, consisting of 266 miles of pipeline and 8,920 horsepower in compressor capacity and appurtenant facilities, at an estimated cost of $31.4 million. These facilities are part of a $55.5 million project, including 126 miles of main line pipe, to supply up to 100 million cubic feet of natural gas daily to a new customer, Southern California Edison Co., for boiler fuel. Authority for gas sales to this utility has been withheld until the company has improved its over-all supply position. In still another F.P.C. action, the company was authorized to construct and operate a dehydration plant with an installed capacity of 50 million cubic feet of gas per day, and about 68 miles of main line and field lines, and appurtenant facilities at an estimated cost of nearly $4.1 million.

● **Gulf Interstate Gas Co.** was authorized to construct and operate approximately $2 million of natural gas facilities during 1958 in a budget type application which limited the cost of any individual project to $200,000.

● **Kentucky Gas Transmission Corp.** has permission to construct and operate nearly 21 miles of pipeline in Kentucky at an estimated cost of $2.2 million. This parallel transmission line is required to meet the anticipated 1958-59 winter peak day demand of the Cincinnati area, and will increase design capacity by an additional 33 million cubic feet daily.

● **Lone Star Gas Company** was authorized to construct and operate storage facilities at a cost of $741,000 in Clay County, Texas, to render more adequate service to customers in the Wichita Falls area. The company also recently filed a budget type application seeking authority to construct and operate natural gas facilities during 1958 at an estimated cost of $1.75 million. The cost of each project is limited to $350,000 and will enable the company to secure additional reserves from producers in the area.

● **Manufacturers Light and Heat Co.** has been authorized to construct and operate 21 miles of transmission line and other facilities required to serve Olin Mathieson Chemical Corp.'s aluminum plant in Monroe County, Ohio. Nearly 14 miles of smaller diameter transmission line will be abandoned. Of the total cost estimated at $1.16 million, Olin Mathieson will advance $457,000 for the facilities to serve its plant.

● **Michigan Wisconsin Pipe Line Co.** has filed an application requesting authority to construct and operate a gathering system in Laverne Field, Okla., 56 miles of line to connect the main line to the gathering system, 45 miles of loop line, and 10 new compressor stations aggregating 35,100 horsepower capacity. These facilities, estimated to cost more than $22 million, will enable the company to transport an additional 40 million cubic feet of gas daily to markets in Michigan and Wisconsin.

● **Northern Natural Gas Co.** has received authority to construct and operate nearly 28 miles of loop line in Texas and Oklahoma at an estimated cost of $3 million. Temporary authority for these facilities was granted in January.

● **Southern Natural Gas Co.** filed two applications with the F.P.C. seeking authorization to construct and operate natural gas pipeline facilities in Louisiana at an estimated cost of approximately $40 million. These facilities include nearly 137 miles of 24 and 26 inch pipeline, 216 miles of supply lines, and 3,650 additional compressor horsepower, and are extensions of its southern Louisiana supply system. The company's deliverability will be increased by 298 million cubic feet per day; the additional supply will be used to meet current demands of existing customers. In another F.P.C. action, the company was given temporary authorization to construct natural gas facilities to connect to its system additional gas reserves in southern Louisiana at an estimated cost of $1.4 million. The authorization includes 45 miles of supply laterals, nearly 21 miles of pipeline, and an additional 2,660 compressor horsepower capacity to existing stations. It is designed to add over 40 million cubic feet of gas per day to system capacity. In a third F.P.C. action, Southern Natural Gas is authorized to construct and operate nearly 13 miles of pipeline and a measuring station in Louisiana. These facilities, at an estimated cost of $887,000, will be used to purchase natural gas produced in the Tantine Field.

will supply up to 10 million cubic feet of gas per day to Olin Gas Transmission for resale to the St. Francisville Paper Co.

● **Texas Illinois Natural Gas Pipeline Co.** filed an application requesting authority to construct an additional 2,000 compressor horsepower in 8 different stations at a cost of $3.9 million. The pipeline capacity will be increased by 20 million cubic feet daily to supply increased demands of current customers.

● **Transcontinental Gas Pipe Line Corp.** was granted authorization to construct and operate about 24 miles of purchase laterals and 4 purchase meter stations at an estimated cost of $705,000. These facilities, for which temporary authority was given last February, will enable the company to receive natural gas purchased in the Pleasanton and South Pleasanton areas of Texas.

Rate cases

● **El Paso Natural Gas Co.** was allowed an $18.6 million annual wholesale rate increase (of a proposed $18.8 million increase) in a decision filed by F.P.C. Presiding Examiner Simpson. The proposed increase, filed in October 1954 and suspended in November, went into effect, subject to refund, April 15, 1955. It remained in effect until December 31, 1957, and then was superseded by a newly proposed rate increase. The presiding examiner concluded that except for $243,000 to be refunded to customers, the proposed rates were justified and reasonable.

● **Natural Gas Pipeline Co. of America** and Texas Illinois Natural Gas Pipeline Co. have filed substitute rate increases to become effective May 1, 1958, with the consent of their wholesale customer companies. Natural Gas Pipeline is proposing to substitute a $1.7 million annual increase for the $6.4 million increase suspended since last December. Texas Illinois Natural Gas Pipeline would substitute a $1.6 million increase for its previously suspended $2.7 million filing. Both new filings are based on a 6 per cent rate of return rather than the 6.5 per cent rate sought in the suspended applications. The original increases were suspended until May 22, 1958, when they become effective subject to refund, if the proceedings have not been concluded. The wholesale customers affected by the two proposed increases serve market areas in Missouri, Illinois, Indiana, Kansas, and Wisconsin.

● **Panhandle Eastern Pipe Line Co.**'s proposed $12 million annual wholesale natural gas rate increase was suspended pending a hearing and decision by the F.P.C. The Commission noted that 24 of the 59 utility customers affected by the increase have objected and have asked for a full investigation and hearing. Still under suspension is a prior proposed $7 million rate increase being collected subject to refund. In support of higher rates, the company claims a 7 per cent rate of return, a higher commodity value for its own production, and increased purchased gas costs, wages, and salaries.

● **Southern Natural Gas Co.** has filed an application requesting an $11 million annual wholesale rate increase in substitution for an $18 million proposed increase under suspension since last September. The revised increase is the result of discussions and negotiations with customers, intervenors, and state commission representatives. It reduces the increase from 33.5 per cent as originally proposed, to 20.3 per cent annually. The substitute filing is based on higher purchased gas costs and a 6 per cent rate of return in lieu of a 6.8 per cent return requested in the original application. Affected by the higher rates would be 95 wholesale customers in Mississippi, Alabama, Georgia, and South Carolina. The effective date of the increase is April 16 for the latest proposal, if accepted by the Commission; otherwise April 16 will become the effective date for the earlier suspended increase, which will be then subject to refund.

SUMMARY OF INDEPENDENT GAS PRODUCER RATE FILINGS—FEBRUARY 1958

	Number	Annual Amount
Tax rate increases allowed without suspension	3	$ 50
Other rate increases allowed without suspension	51	159,314
Rate increases suspended	60	822,675
Total rate increases	114	982,039
Tax rate decreases allowed without suspension	4	1,368
Other rate decreases allowed without suspension	—	—
Total rate decreases	4	1,368
Total rate filings (all types)	551	
Total rate filings acted on from June 7, 1954 to Feb. 26, 1958	28,100	
Rate increases disposed of after suspension (during February)	1	48,449
Amount allowed	—	1,972
Amount disallowed	—	—
Amount withdrawn	1	46,477
Rate increases suspended and pending as of Feb. 28, 1958	1,162	$51,637,992

New outdoor advertising medium offered to gas companies

A PROPOSAL to use exciting new Gas Hi-Way Spectaculars—gas outdoor advertising signs visible 24 hours a day without electricity—has been put before the A. G. A. Promotional Planning Committee. The proposed program, successfully implemented, would blanket the nation with uniform roadside advertising displays affording localized impact of A. G. A. advertising themes.

The display, a 10′ x 20′ structure, is designed especially for A. G. A. members. It features a permanent section for gas company identification, and a 6′ x 12′ panel on which A. G. A.-approved poster copy changes are made every 90 days.

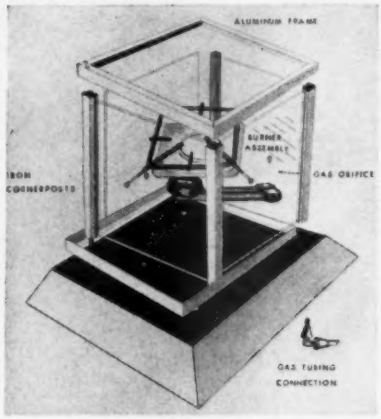
The name, flame, and selling message are reproduced in Scotchlite reflective sheeting; the reflective paper used is Reflecto-Lite. Both brands are products of Minnesota Mining and Manufacturing Co.

National Advertising Co., a subsidiary of Minnesota Mining, will soon send representatives to call on A. G. A. member companies. The subsidiary, with headquarters at 33 South Park St., Chicago, operates 18 branches and 26 service points in the U.S. It offers the following services to participating companies: securing of locations, erection, maintenance, and the production of posters and poster changes. This eliminates the necessity for participants to deal with more than one company.

The poster program using customer-selected locations would complement A. G. A.'s 24-sheet poster program. The highly favorable reactions of those already acquainted with the new program indicate that it will not be long before Gas Hi-Way Spectaculars cover the country.

Shown is new Gas Hi-Way Spectacular especially designed for A. G. A. member companies. The panel at lower right is changeable to conform with national promotion campaigns, and the entire sign is composed of reflective paper, to make it visible 24 hours a day without the use of electricity

Offer directions for setting up Magic Flame display



Shown is a diagrammatic drawing of the Magic Flame display—an eye-catching display of a gas flame without an apparent source of fuel

SINCE last June, when A. G. A. MONTHLY invited its readers to figure out how Milwaukee Gas Light Co.'s Magic Flame display works, many readers have requested information on duplicating the display.

The display, showing a gas flame without an apparent source of fuel, has been used successfully at home shows, state fairs, and other exhibitions—often in connection with a "Can You Guess How the Magic Flame Operates" contest. The idea for the display comes from Murray Holloway Jr. of San Diego Gas & Electric Co., and has been used by that utility on various occasions.

In the September issue of the MONTHLY, brief instructions on setting up the display were given, together with the names of those who had arrived at the solution. The many requests for more specific instructions have prompted Philip E. Arnold of Milwaukee Gas to offer the diagram shown at left, plus step-by-step directions. After following these directions, one would duplicate the Milwaukee display exactly. However, slight variations in construction would also give the same general results.

Mr. Arnold explains, "The gas, either natural gas or LP-Gas, is supplied from beneath into one of the corner posts. It finds its way out through a small orifice, mixes with air, and enters the burner venturi. There is a 1⅛" gap between the orifice and venturi. Alignment at this point is quite critical. The air shutters on the burner are non-functional, but can be adjusted to create deception." The Magic Flame may be divided into five sections, he advises, to be constructed as follows.

1. Burner assembly. Using a 1957 Roper rear burner, cut a 3¾" section from the straight portion of the venturi. Secure the remaining sections by sleeving, pinning, and soldering; brazing is useful, also. Plug the simmer or small venturi of the burner. Secure the bowl pan to the grate. Tap and thread the burner head so the grate can be fastened to it, thus forming an integral unit. Then tap and thread the corners of the grate so motorcycle spokes can be inserted.

2. Corner posts. Using corner posts of 1" square iron stock cut to 18" length, make two mills within ½" of the bottom of each post to accommodate the glass. Drill the post containing the orifice with a ¼" drill to about 8" above the base. Drill a small orifice about 6¾" from the base. This hole should be MSTD drill size 54 for natural gas, and MSTD drill size 67 for LP-Gas. Drill and tap the base of the "gas" post for ⅛" gas pipe. Secure this post to the base by using washers and a ⅛" x ⅜" reducer as a nut. Attach to the reducer a ⅜" brass elbow and ⅜" flare nut for supplying gas through aluminum tubing. Secure the remaining posts from beneath, with stove bolts.

3. Frames. Construct frames of 1" channel aluminum, open at one end, thus allowing provision to secure them. Fasten the open end of the top frame to one of the corner posts by two small screws. Drill ½" holes in the bottom frame to allow the stove bolts holding the corner posts to go through it. The open corner is secured by the post bolted upon it. Both frames measure about 16¼" square.

4. Glass sides. Use plate glass (Plexiglass has been found to warp from the heat) which measures 14⅜" wide and 17½" long. Center the hole for the motorcycle spokes about 8¼" from the top. Mill the rods to within ½" of the base so that air is allowed to enter from under the base.

5. Base. The base used was tapered (although this can be left to the builder's imagination) and measured 23¾" square at the top, and 32¾" at the bottom. Drill 4 holes in the base to accommodate the 3 bolts and the gas connection from beneath.

Pie queen

Ted Garrity of Northern Illinois Gas crowns Judy Burnidge as "Penny Flame Cherry Pie Queen." The student won $400 college scholarship in the utility's recent baking contest, while seven other finalists won $50 U.S. bonds. At left is the winner's home economics teacher, and at right, Lois Bauer, utility home service advisor. Miss Burnidge's scholarship will start her off in home economics studies at Manchester College

New research center

ROBERTSHAW-FULTON Controls Co. plans to construct a fifth research and development center to seek out advanced automatic control devices for use in home and industry, and to engage in special developmental work under government contracts. The new expansion in research will involve approximately $950,000. It is to be called the Eastern Research Center and will be built on a 20-acre site located 14 miles from the center of Philadelphia in the town of King of Prussia. Robert V. Coles, formerly in charge of the company's general instrument division, has been named general manager.

New A.G.A. publications

PUBLIC INFORMATION

• **Intercom, Western Workshop Edition—March 1958.** Free of charge.

RESEARCH

• **Atomic Energy Highlights** by N. K. Chaney. Free of charge.

STATISTICS

• **Monthly Bulletin of Utility Gas Sales, March.** Free of charge.

• **Report of Rate Committee, 1956-57.** Cost is $2 for A. G. A. members, $3 for nonmembers.

Award presented

AN American Gas Association Safety Merit Award was recently presented to the service shop department of Michigan Consolidated Gas Co. Hugh C. Daly, executive vice-president, made the presentation which was accepted on behalf of the department by its superintendent, J. L. Joachim. The department accumulated 3,145,503 manhours free of disabling injuries over a period of about 20 months. The department would have set a new gas industry safety record in just four more days; the present record, held by Hope Natural Gas Co. and subsidiaries, is 3,167,788 hours.

Safety awards

PRESENTATIONS of three American Gas Association safety awards were made during the recent annual supervisors' safety conference of Consumers Power Co. Two of them were A. G. A. Safety Merit Awards, given in recognition of one million accident-free manhours. These were presented at the conference by J. H. Campbell, senior vice-president, to D. J. Conway in behalf of the Flint division, and J. P. Thomas in behalf of the Lansing division. Mr. Campbell also presented an A. G. A. Accident Prevention Award to the company's gas division for its 25 per cent improvement in accident frequency; J. B. Simpson, vice-president, accepted this award.

Gilbert succeeds Bristol as Greenwich president; Winslow treasurer

DAVID T. GILBERT has been elected president of Greenwich (Conn.) Gas Co., upon the retirement of Gardner L. Bristol. Richard A. Winslow has been elected treasurer.

Mr. Bristol has been with the firm for the past 32 years, as president for the past five years. Mr. Gilbert was vice-president, treasurer and secretary prior to his election as president.

Mr. Gilbert, a Harvard graduate, joined the gas company in 1946. In 1947 he left for the Stanley Newman Co. in Boston, and returned again to the utility in 1951 as executive assistant. The following year he was named treasurer and in 1953, vice-president and treasurer. In 1955 Mr. Gilbert became vice-president, treasurer and secretary.

The retiring Mr. Bristol joined Greenwich Gas Co. in 1926. He is credited with being largely responsible for the design and construction of the entire gas distribution system. Before joining Greenwich Gas, Mr. Bristol was an engineer with Connecticut State Highway, and Connecticut Light and Power Co.

The new treasurer, Mr. Winslow, has been with the firm since 1951. He started as a salesman, and in 1952 was promoted to office manager. Mr. Winslow is a graduate of the University of Connecticut.

Southern California elects Letton to board, Proctor vice-president

H. P. LETTON JR., general attorney, was elected a board member of Southern California Gas Co., and H. A. Proctor, manager of engineering, was elected vice-president in charge of engineering and transmission.

Mr. Proctor's promotion, and the subsequent executive and managerial assignment changes, resulted from the recent move of Vice-President Grove Lawrence to the Pacific Lighting Gas Supply Co.

Mr. Proctor's former position as manager of engineering will be filled by S. A. Bradfield, manager of transmission. T. S. Miller, supervisor of system planning, will move to Mr. Bradfield's post, while A. M. Lawson, San Joaquin Valley division engineer, will take over Mr. Miller's former position.

Mr. Letton joined the gas company as assistant general counsel in 1951 and was named general attorney in January 1957.

Mr. Proctor has been with the company since 1939, serving as administrative engineer of the butadiene production department, and becoming manager of engineering in 1948.

Personal and otherwise

Siert vice-president

HARRY H. SIERT, treasurer, has been promoted to vice-president and treasurer of Northern Natural Gas Co. Other promotions are: Frank H. Roberts to chief accounting officer and Ernest M. Petersen to assistant to the president and assistant secretary. In his new capacity Mr. Siert, who has been treasurer of Northern since 1948, will have the company's accounting, tax and treasury departments under his supervision. He has been with Northern for 21 years.

Mr. Roberts has been with Northern since 1945. Prior to being named chief accounting officer, he was assistant controller.

Name Pierson, Carroll

W. C. PIERSON has been appointed general superintendent of the Philadelphia Electric Co.'s gas operations. Mr. Pierson, a graduate chemical engineer of Pennsylvania State University, has been an employee of the utility since 1924. Prior to his appointment he was general superintendent in charge of gas transmission and distribution for the utility. J. W. Carroll succeeds him in the latter post. He has been employed by the utility since 1930, following his graduation from Johns Hopkins University with a degree in gas engineering. Both men are members of the American Gas Association.

Pacific Lighting names Miller, Parker, Bigelow; Gillin retires

GEORGE A. GILLIN retired April 1 as secretary of the Pacific Lighting Corp., after 30 years of service to the company.

Also on April 1, the following promotions became effective: Paul A. Miller, with 10 years' service, became vice-president and treasurer; Fred J. Parker, with 12 years' service, became secretary; and William R. Bigelow, with two years' service, became assistant secretary and assistant treasurer.

Pacific Lighting has also announced that W. M. Jacobs, vice-president of the corporation, has in addition assumed the position of senior vice-president of a subsidiary, Pacific Lighting Gas Supply Co., where he is now in charge of gas procurement. Mr. Jacobs has been with the system since 1930, having joined the parent corporation in late 1956.

New Orleans names Avegno executive assistant, Sinnott sales manager

E. N. AVEGNO of New Orleans Public Service Inc. has been promoted to executive assistant. Charles J. Sinnott succeeds Mr. Avegno as general sales manager.

Mr. Sinnott, who attended Tulane, has had many years of experience in utility sales promotion. He joined Public Service in 1937 as a commercial sales representative, and was later transferred to the residential division, where he became a group supervisor. He later became customer service supervisor of that division, and was promoted to general supervisor in 1947. In 1952 he was appointed residential sales manager.

Mr. Avegno, who has been associated with Public Service and predecessor companies since 1903, has spent most of his career in the sales field. He became head of the dealer sales division in 1934, and in 1954 was named general sales manager. Mr. Avegno has held many important posts in local and national business and civic organizations. In his new assignment he will continue to be active in area development projects.

Bridge dies; past president A.G.A., PCGA, Southern California

ARTHUR F. BRIDGE, president of Southern Counties Gas Co. from 1947 to 1954, died March 25 following a long illness.

Mr. Bridge was president of the American Gas Association in 1943, and president of the Pacific Coast Gas Association in 1949. He also served in numerous capacities for both associations, including as A. G. A. vice-president in 1942; PCGA vice-president in 1948; and A. G. A. director from 1939 to 1946.

Following graduation from the University of California, Mr. Bridge was assistant engineer in the gas and electric division of the California Railroad Commission from 1913 to 1917. This commission is the predecessor of the state's Public Utilities Commission.

During World War I he served as captain in the engineer corps in France and Germany. Following the war he was assistant chief engineer of the Belgian mission of the American Commission to Negotiate Peace and War Damages in Allied Countries until 1919.

Immediately following, Mr. Bridge joined Southern Counties as rate engineer and was promoted to executive engineer in 1926. He was elected vice-president in charge of operations in 1928, a director in 1930, and vice-president and general manager in 1939. He was elected president in 1947, and served in this capacity until May 1954, when he withdrew from active duty because of illness.

Mr. Bridge is survived by his widow; a son, Walter W. Bridge; two daughters, Mrs. Robert M. Joses, and Mrs. John E. Hunt; and two sisters, Mrs. Harry B. Allen and Miss Helen Bridge.

Keller retires after 43 years with Philadelphia Electric

E. N. KELLER retired Feb. 1 from Philadelphia Electric Service after over 43 years of service. J. J. Natale succeeds him as manager of the customers' accounts division, and J. F. McCahon succeeds Mr. Natale as assistant manager. Mr. Keller started with Philadelphia Electric in an accounting capacity, and progressed to positions as supervisor, office manager, and later head of the central customers' billing department. In 1931 he was appointed to the customers' accounts post. Mr. Keller was always highly active in the American Gas Association and other utility associations, and served on virtually every committee of the A. G. A. Accounting Section.

He was chairman of that Section in 1941, and thereafter served for many years on the Accounting Section Managing Committee. He was also instrumental in inaugurating the Joint Conference of Utility Accountants.

Names in the news—a roundup of promotions and appointments

MANUFACTURER

Charles A. Carey, vice-president of Chicago's Harris Trust and Savings Bank, has been elected a director of the Maytag Co. Also at Maytag, three new regional managers have been appointed: **Kelly M. Lord** and **Alan R. Taylor** will serve dealers in the Los Angeles area, and **G. H. Lyons** will serve dealers in New Mexico.

Sprague Meter Co. announces the appointment of **Theodore A. St. Clair,** formerly assistant chief engineer with Bastian-Blessing Co., as chief engineer; and the appointment of **Thomas J. Watt** as Eastern regional manager. Mr. Watt is chairman of the Gas Meter and Regulator division of GAMA. He has been with Sprague for nearly 30 years.

William Crooker has been named chief engineer of Mueller Climatrol Division's Western zone.

New manager of advertising and sales promotion succeeding **John Rusinko** at Minneapolis-Moline is **Roger R. Hipwell.** At the company's Minnesota general offices, **Clem A. Kiener** has been named assistant general sales manager.

Joseph A. Howell Jr. has been named counsel for the executive offices of Robertshaw-Fulton Controls Co.

New member of Geo. D. Roper Corp's field sales staff is **Walter E. Bimm.** He will cover all Illinois areas outside of Chicago.

Walworth Co. reports that **R. F. Fred Klein** has been appointed manager of lubricated plug sales.

Harold Michel has been appointed vice-president in charge of sales of the newly formed Midco Valve & Fittings, Inc., Evanston, Ill. Mr. Michel was a member of the parent company, Midcontinent Tube Service, Inc., for the past three years.

John T. Benedict has been named a direct factory representative for Ruud Manufacturing Co., to serve in Chicago and northern Illinois areas.

UTILITY

Clifton Wade has been elected to the board of Arkansas Western Gas Co. Mr. Wade, senior partner in the law firm of Wade and McAllister, is president of the Washington Country Bar Association.

New administrative assistant to the president of Michigan Consolidated Gas Co. is **Norman E. Kenyon,** former Detroit newspaperman and most recently public relations director of Fred M. Randall Agency.

Howard H. Hessler has retired from Philadelphia Gas Works after 44 years of service. He was commercial manager of the utility directly previous to his retirement. Before that he was assistant controller, and manager of the internal audit department. He has been an A. G. A. member for 25 years.

Samuel E. Tappan, assistant manager of Boston Gas Co.'s industrial-commercial division since 1953, was promoted to manager of that division. He held engineering posts with Salem Gas Co. and Fitchburg Gas Co. before joining Boston Gas in 1948.

Elizabethtown Consolidated Gas Co. announces the appointment of **George H. Coon** as chief engineer. His duties will include the planning and coordination of all engineering activities in all branches of the gas department. Before joining Elizabethtown in 1952 as assistant superintendent of distribution, Mr. Coon was with Kings County Lighting Co.

Albert J. Klemmer, with Rochester Gas and Electric Corp. since 1946, has been elected auditor. His previous positions with the utility were clerk in the auditing department, supervisor of systems and methods in the auditing department, manager of accounting developments in the administration department, and acting auditor. He is a past chairman of the A. G. A. Accounting Developments Committee.

Louise E. Schmidt has been named general auditor of Equitable Gas Co. He has been with the company for 25 years, and will now be in charge of general accounting, payroll and stores accounting, and customer accounting.

Newly appointed chief civil engineer of Pacific Gas and Electric Co. is **J. Dean Worthington.** Mr. Worthington, who has been with the utility company since 1933, succeeds **Carl W. Appleford,** who retired after 38 years of service.

After 28 years of service, **W. F. Ivers** has retired from United Gas Corp. He was most recently Beaumont division manager. This post will now be filled by Ross Walker, former assistant division manager.

Hugh T. Libby, gas distribution manager of the British Columbia Electric Co. since 1956, has been promoted to the newly created post of manager of gas engineering and development. Mr. Libby has been a member of the A. G. A. Design and Development Subcommittee for the past five years. Succeeding him as gas distribution manager is **D. W. Minion,** who joined the company two years ago, and has coordinated the conversion to natural gas in the area. Mr. Minion entered the utility industry in 1950, with the Canadian Western Natural Gas Co.

Fred A. Hubbard, who has been with the New England Gas and Electric System for 34 years, has been appointed general superintendent of the New Bedford Gas and Edison Light Co.

A party in his honor marked the retirement of **Murray J. Singiser,** after 50 years with the Harrisburg Gas Division of the United Gas Improvement Co. Mr. Singiser started with the company as its first messenger, and during the past 24 years has worked in the sales department.

Last month **Daniel S. McIntire** retired after 24 years with Ohio Fuel Gas Co. Mr. McIntire has been manager of the company's Springfield district for the past 11 years.

Washington Natural Gas Co. announces the retirement of **Irving Law** after nearly 52 years of service, and of **Andrew Lingo,** after 45 years of service. Mr. Lingo has been in charge of customer relations. Mr. Law, considered the gas industry's driving champion, has had no traffic accident during his entire career as customer service driver for the company and its predecessors.

New York State Natural Gas Corp. announces the following new appointments: **Charles E. Brooks,** to assistant to manager, storage; **John W. Hart,** to assistant to manager, stations; **Albert H. Reschke** and **Joseph E. Coddington,** to assistant managers, engineering; **Robert R. Coder,** to head engineer, Sabinsville compressor station; **Francis Cole,** to head engineer, Woodhull compressor station; **John F. Nelson,** to superintendent of the newly created Leidy district; and **Floyd P. Foster,** chief engineer, central division compressor stations.

New Jersey Natural Gas Co. announces the appointment of **George E. Morgan** to the newly created position of assistant manager in charge of operations of the central division. He was formerly manager of the northern division.

OTHER

At Stone & Webster Engineering Corp., **Edwin H. Krieg,** vice-president and consulting engineer, has been elected a director. In addition, three men have been elected vice-presidents. They are: **Arthur J. Good,** comptroller, and **W. L. Sheets** and **H. N. McCampbell,** construction managers.

John Lawrence, who moved to a Dresser Industries vice-presidency in 1957 from his former position as president of Joy Manufacturing Co., has been elected a new member of the Dresser board. He is executive vice-president of the firm.

Selas Corp. announces the appointment of **C. Glen Bigelow Jr.** to the newly created position of director of research, and **David A. Mallett** as application engineer.

Edith Ramsay, home equipment editor of *American Home* for the past 12 years, has joined the staff of *Look* as merchandise editor.

OBITUARY

Francis B. Flahive

68, retired vice-president of the Columbia Gas System Service Corp., died March 30.

Mr. Flahive entered the utility business in 1907, when he joined Stone & Webster. He was with that firm until 1927, when he joined Columbia Gas. In 1928 he was named assistant treasurer of the former Columbia Gas & Electric Corp. In 1941 he was named vice-president of the Columbia Gas System Service Corp., in charge of insurance, pensions and motor vehicle operations. He held this position until he retired in 1954, after 28 years with the system.

Mr. Flahive is survived by his widow, Winafred Hearons Flahive, and by three sisters.

Charles Mayer

a member of the board of The Gas Service Co., died March 1. He was 82.

Mr. Mayer was originally named a member of the board of the Wyandotte County Gas Co. and the Kansas City Gas Co. in 1925, and in 1927 started service as a director of Gas Service. His career included periods as a city attorney, a state senator, and a circuit judge. In 1923 he founded the law firm that later became Mayer, Conkling, and Spragle.

Offer refrigeration patents

PRESIDENTS of 18 firms manufacturing refrigerators have been informed that Whirlpool is now making available for licensing approximately 135 patents related to gas refrigerators and freezers. Whirlpool will list in the U. S. Patent Office *Gazette* as available for licensing on a non-exclusive, reasonable royalty basis, absorption-type refrigeration patents that it acquired from Servel. Certain patents relating to other appliances manufactured by Whirlpool will also be listed for licensing. Licenses will be available to any interested parties. Whirlpool, early this year, acquired certain of the Servel physical facilities and patents and plans to manufacture and market a gas refrigerator under the name RCA Whirlpool.

La Gloria moves

LA GLORIA Oil and Gas Co., wholly-owned subsidiary of Texas Eastern Transmission Corp., will soon move its general offices from Corpus Christi to Houston, Texas. The move, which affects approximately 100 persons, will bring about closer liaison between the land, exploration and production personnel of the two organizations.

Scientists speak

SEVEN NOTED SCIENTISTS are alternating lectures with graduate students in chemistry during a spring seminar at Illinois Institute of Technology, Chicago. The chemistry seminar sessions, which started Feb. 11, will be held each Tuesday until May 27. In addition to the post-graduate degree candidates, guest speakers have been: Feb. 25, Jean Droward, University of Brussels, "Mass Spectrometric Studies in High Temperature Chemistry"; March 4, Dr. R. A. Dinerstein, Standard Oil Co., "Gas Chromatography—A New Analytical Technique"; March 18, D. A. McCauley, Standard Oil Co., "Acid-Base Complexes and Their Role in Catalytic Reactions." April and May guest speakers are: April 8, Dr. N. C. Yang, University of Chicago, "Photolysis of Ketones in Solution"; April 29, Dr. E. VanTamelen, University of Wisconsin (to be announced); and May 6, Dr. B. Wunderlich, Northwestern University, "Cold Crystallization of High Polymers."

C of C convention

CONGRESSIONAL and administration proposals for tax changes, public works and spending will be among issues of vital concern to business on the program of the 46th annual meeting of the U. S. Chamber of Commerce, April 27-30, in Washington, D. C. Top speakers will discuss the impact of taxes on business, the economic outlook, White House plans for offsetting the recession, America's future in the space age, the prevailing sentiment on Capitol Hill toward defense spending and reorganization, and the growing power of unions and the need for corrective legislation. Members of Congress representing both parties will take part in a panel discussion of the looming political contest.

Move regional office

CALORIC Appliance Corp.'s Philadelphia regional sales office has been moved into new headquarters at the Benson Office Building, Township Line and Old York Rd., Jenkintown (suburban Philadelphia). The sales and advertising offices formerly were located in central Philadelphia in the PSFS Building, 12 South 12th Street.

To advertise on radio

THE National LP-Gas Council's sales promotion efforts take to the air this year for the first time in the history of the advertising and promotion arm of the LP-Gas industry. The council will sponsor a 26-week schedule of weekend five-minute newscasts over 400 radio stations of the coast-to-coast Mutual network. A special feature of the network radio shows is the sales promotion opportunity afforded council member-marketers to tie in by buying spot commercial time on local Mutual stations either preceding or following Council newscasts. Dealers can broadcast brand or company name identification and appliance prices in their adjacent commercials. In effect, they can appear to sponsor the council radio shows while giving specific information about their business. Full details on this opportunity, which is limited to council members, can be obtained by writing the National LP-Gas Council, 185 N. Wabash Ave., Chicago, Ill.

CONVENTION CALENDAR

1958

JULY

7-11 •National Housewares and Home Appliance Manufacturers Exhibits, Auditorium, Atlantic City, N. J.

SEPTEMBER

3-5 •Pacific Coast Gas Association, Annual Meeting, Benson and Multnomah Hotels, Portland, Ore.

5 •New Jersey Gas Association, Annual Meeting, Spring Lake, N. J.

15-16 •INGAA, The Roosevelt Hotel, New Orleans, La.

17-19 •Southeastern Gas Association, Annual Meeting, Sir Walter Hotel, Raleigh, N. C.

24-27 •Seventh International Gas Conference, Rome, Italy.

OCTOBER

13-15 •A. G. A. Annual Convention, Atlantic City, N. J.

15-17 •Wisconsin Utilities Association, Hotel Schroeder, Milwaukee, Wis.

20-24 •National Safety Council, Chicago, Ill.

21-24 •American Dietetic Association, Philadelphia, Pa. (A. G. A. will exhibit)

22-24 •Air Conditioning & Refrigeration Wholesalers, Annual Meeting, Sheraton-Palace Hotel, San Francisco, Calif.

27-31 •National Metal Exposition, Cleveland, Ohio. (A. G. A. will exhibit)

NOVEMBER

3-7 •National Hotel Exposition, Coliseum, New York City. (A. G. A. will exhibit)

17-20 •American School Food Service Association, Philadelphia, Pa. (A. G. A. will exhibit)

DECEMBER

1-3 •American Society of Refrigerating Engineers, Semi-Annual Meeting, Hotel Roosevelt, New Orleans, La.

1-4 •National Warm Air Heating and Air Conditioning Association, Annual Convention, Cleveland, Ohio.

7-9 •Institute of Appliance Manufacturers, Statler-Hilton Hotel, Dallas, Texas.

16 •Rocky Mountain Gas Association, Annual Meeting, Denver, Colo.

Personnel service

SERVICES OFFERED

Public Relations Director—experienced in all phases of public relations. Sound approach to community and customer relations. Would relocate. **1912.**

Personnel Manager—practical experience in recruitment, interviewing, hiring, and training. Can re-locate. **1913.**

Sales-Minded Advertising Executive—over 16 years' experience with 3 large advertisers in every phase of advertising—management, sales promotion, merchandising, public relations and sales; giving him a solid background in media, layout, copy, production, procurement and budgets. Wide experience in the planning and development of national advertising and sales promotion programs, with collateral materials, on consumer and commercial-industrial products. Current salary $9,600, plus. Detailed resume on request. **1914.**

Sales Consultant—former utility executive with outstanding sales record in gas industry now available for spot assignments in organizing and orienting sales departments, campaigns, policies, etc. **1915.**

Young Canadian Executive—chemist, 12 years' experience, domestic and overseas, sale and start-up gas production and processing plant, most recently general manager and secretary-treasurer process engineering subsidiary. Available June because of elimination these operations. Will readily accept similar management responsibility or process development work. **1916.**

POSITIONS OPEN

Operations Superintendent—opening in medium sized natural gas utility in Midwest for an able graduate engineer or equivalent to supervise construction, maintenance, service on customer premises, appliance installation, metering, pressure regulation and planning system expansion. Liberal benefits. Salary commensurate with experience and ability. State personal and educational qualifications. **0861.**

Gas Engineer—for one who is sales-inclined there exists an excellent opportunity with a long established manufacturer supplying gas utilities. Successful applicant will be trained at the plant in all phases of our business. Considerable travel would be necessary as well as locating in the Midwest. Age range 25-35. In reply give full disclosure regarding age, education and experience. **0862.**

Rate & Economic Research Man-Natural Gas—opportunity with natural gas pipeline company. College graduate, some engineering background; industrial competitive fuel analysis and operating company rate experience essential. Salary open, experience and capacity controlling. Send complete resume. **0864.**

Sales Manager—competent individual to manage builders division of large southeast Pennsylvania utility. Experience must include knowledge of characteristics of domestic appliances, ability to formulate promotional programs and sales presentations. **0865.**

Engineer—for natural gas distribution company, central New York. Generous employee benefits. Individual with ability will be given increasing responsibility, commensurate salary. Work will permit broad experience in other phases of public utility work in addition to gas distribution. Previous work in distribution and LP-Gas operation desirable. Reply stating experience, salary, and personal background. **0866.**

Mechanical Engineer Graduate—with initiative and ability to design and develop industrial gas and oil burners; at least 4 years' similar experience required; excellent opportunity to grow with Middle Atlantic states organization. Replies confidential. Our organization knows of this advertisement. Send full resumé of education, experience and salary requirements. **0867.**

Project Field Engineer—preferably with experience building propane plants, gas piping, etc. Liberal salary and living expenses to qualified man. Submit resume and references. **0868.**

Manager—Gas Property—Pennsylvania and Maryland utility with division offices in Maryland and Pennsylvania has an opening for a progressive manager. Experience in operation, distribution and selling preferred. Please state age, education and other background information when replying. **0869.**

Industrial Sales Engineer—growth utility company has an opening in industrial sales for a graduate engineer with 2 to 5 years of gas sales or comparable customer contact experience. When replying, send resume and small photograph. **0870.**

GE appliance manager fears 'resurgent gas industry'

THE ELECTRIC appliance industry is in danger of being pushed off the map by a resurgent gas industry, charged Charles Rieger, General Electric vice-president and general manager of major appliances, at the sales convention of the Edison Electric Institute in Chicago.

Appliance manufacturers, distributors and dealers are too hard pressed to give the promotional surge needed, he warned. Electric utilities must pick up the promotional ball.

Mr. Rieger also charged that one of the greatest stumbling blocks to more electric appliance sales was inadequate wiring. The utilities, he said, should provide additional wiring for home owners at $10 to $15 and capitalize the cost by including it in their rate base.

For seven years there has been little growth in appliances, he said. Profits today are down in all levels of the industry.

Manufacturers' net to sales is down to 2 per cent, distributors' net to sales is down to 1 per cent, and dealers' down to 2 per cent, he said.

Unit sales in 1957 were down 11 per cent, despite the fact that the appliance industry was spending all it could to get more of the consumer dollar, Mr. Rieger said.

National electric manufacturers are spending $40.5 million a year on national advertising, compared with $600,000 by all gas appliance manufacturers, he said.

Despite this, the ratio of electric dryer sales to gas dryers has dropped from 5-to-1 to only 2-to-1, the GE official charged. There is also only 32 per cent saturation of electric ranges and 17 per cent saturation of electric water heaters, despite the fact that these products have been on the market longer than the electric refrigerator.

Mr. Rieger called on the electric utilities to step up their promotional efforts before they lose everything to their gas competitors.

Electric utilities are now spending 1.6 per cent of gross sales for promotion, he said, adding that this is dangerously low for an industry that is making 45 per cent gross profit before taxes.

The gas utilities have seen that the electric heat pump air conditioner endangered their heating load, but they are fighting back, he said.

Gas utilities are subsidizing gas appliance makers, he said.

"They are making volume commitments on gas appliances to assure manufacturers they will have enough orders to bring out lower-priced appliances."

Gas utility sales have grown 105 per cent in five years. Sales by LP-gas industry have grown 700 per cent in 10 years, Mr. Rieger said.

This resurgence of the gas industry is causing some electric appliance manufacturers to examine their position and see if they do not want to go into stronger production on gas appliances, he said.

Inadequate wiring is holding up many electric appliance sales, the GE official charged. He said the Edison Institute through its Housepower program had done much toward meeting the problem, but that much more effort was needed.

"At the current rate, it would take 100 years to complete the job, and frankly, gentlemen, I'm not prepared to wait that long," he said.

He urged utilities to bring in additional wiring and branch circuits and limit the cost to customers to $10 and $15. The utility could then capitalize this investment through its base rate.

The telephone utilities do the same thing, and many electric utilities have this program already in operation, he said.

—Reprinted from an article by Jack Robertson in the March 27 issue of *Home Furnishings Daily*.

Honolulu holiday

A sufficient number of sales leads, for which mileage credits were given in an employee contest, enabled Marie Greco to visit Honolulu with a friend for two weeks. All expenses for both girls were paid by Washington Natural Gas

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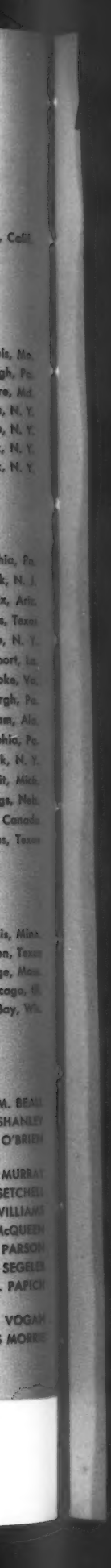
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